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ABSTRACT

Understanding learning differences and how they function in the classroom is important to both students and teachers. The learning preferences described in this handbook are based on the concepts of psychological type developed by Carl Jung. Jung identified three sets of psychological processes, the areas of attitude (orientation), perception, and judgment (decision making). This handbook adds processes based on adaptation. From these processes, eight learning preferences are derived, and each is paired with a contrasting preference. The preferences are illustrated in a color wheel that opposes extraversion and introversion in the area of orientation, sensation and intuition in the area of perception, thinking and feeling as aspects of decision making, and judgement and perception as aspects of adaptation. The handbook contains an individual learning preferences checklist for teachers and students, a guide to its use, descriptions of the preferences, and student worksheets. To help improve instruction, the handbook describes some classroom and teaching strategies related to the preferences. Appendixes include: (1) the student learning preferences worksheet; (2) a class learning preference distribution; (3) a summary of learning processes and preferences; (4) a description of learning preference combinations; and (5) an annotated list of 14 sources to consult on psychological type and a 10-item reading list. (Contains three figures.) (SLD)

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Discovering Learning Preferences and Learning Differences in the Classroom

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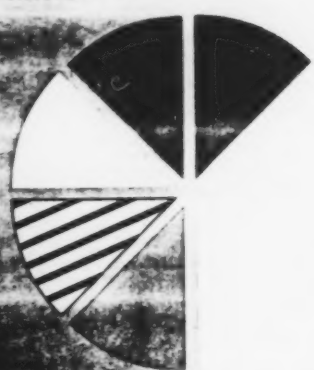

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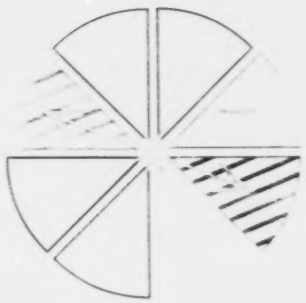
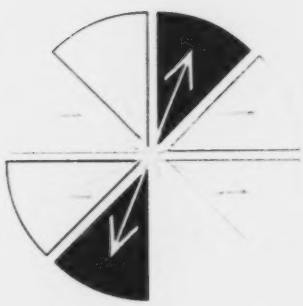
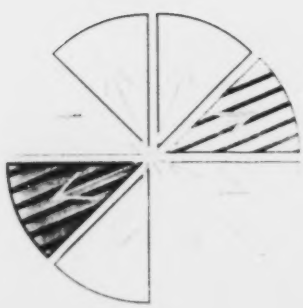
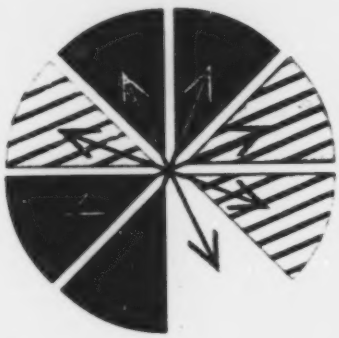
Learning Processes and Preferences

Processes	Preferences
Extraversion / Introversion → *ORIENTATION*	
Sensation / Intuition → *PERCEPTION*	
Thinking / Feeling → *DECISION MAKING*	
Judgment / Perception → *ADAPTATION*	

Discovering Learning Preferences and Learning Differences in the Classroom



by

June R. Bargar
Robert R. Bargar
Jamie M. Cano

1994

Students should not be expected to learn in a manner contrary to their natural predispositions.

> " A falsification of type . . . often proves exceedingly harmful to the physiological well-being of the organism, usually causing acute exhaustion and . . . even neurosis."
>
> C.G. Jung. 1921, 1976, p. 332-333

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Why Use This Handbook?

Learning Differences Are Critical in the Classroom

Educators have long believed that it should be possible to use the same instructional methods to teach all students. For many years, research on instruction and teacher behavior was directed to that elusive end. Now we know that **students** differ greatly in how they learn. Although there are some teaching strategies useful to a whole class, the differences among **students** make it necessary to diversify those teaching strategies. It has always been clear that **teachers** differ in how they teach, but now we know that, like students, **teachers** also differ in how they learn. Differences in teacher learning tend to be reflected in how teachers teach. This can create harmony or discord for individual students, depending on whether or not the student's approach to learning matches the teacher's approach to teaching.

Psychological Processes Affect Learning Preferences

Today, a number of approaches exist which aid the understanding of individual differences and their effects on learning. The learning preferences described in this handbook are based on the concepts of psychological type developed by the Swiss psychologist, Carl Jung. He identified psychological processes which influence the ways in which our minds perceive and organize daily experiences. These processes affect many aspects of our behavior, including the ways in which we learn.

Use Learning Preferences to Improve Teaching

Understanding learning differences and how they function in the classroom is important to both students and teachers. First, **teachers** must understand their own learning preferences, how these preferences affect their assumptions about what constitutes effective learning and teaching, and how these assumptions affect their teaching and relationships with students. Second, teachers must be familiar with the learning preferences of their students and with the teaching strategies and learning activities that are most effective in dealing with these preferences. With a greater self-understanding and knowledge of learning preferences, teachers can more successfully design instruction for an entire class, as well as work more effectively with individual students.

Practice Understanding, not Labeling

Caution: DO NOT LABEL STUDENTS. A knowledge of learning preferences must be used with the understanding that we cannot fully explain all aspects of human behavior. Motivation and learning are more complex than any concepts intended to enlighten our practice. The learning preferences concepts in this handbook **can** help you understand how your students learn. They are applicable to all students to some extent; however, they apply more clearly to some students than to others. Use the learning preferences when they are helpful. **Do not** use them as categories in which you expect all students to fit.

How This Handbook Can Help You Improve Learning and Instruction →

Discovering Learning Preferences and Learning Differences in the Classroom can help you improve your teaching by:

- enabling you and your students to understand the learning preferences and learning differences that affect success in the classroom, and
- enabling you to use that knowledge to improve instruction.

Tools to Identify Learning Preferences →

To help you and your students IDENTIFY learning preferences, this handbook contains the following items:

1. **Individual Learning Preferences Checklist** (see pages 53-55) - helps teachers and students identify learning preferences.
2. **Using the Individual Learning Preferences Checklist** (see pages 49-52) - a guide to interpreting learning preferences identified by the checklist
3. **Learning Preferences Descriptions** (see pages 13-47 - lists student and teacher behaviors for each preference
4. **Student Learning Preferences Worksheet** (see Appendix A, pages 57-58) - used by students to validate learning preferences

Tools to Improve Instruction →

To help you IMPROVE instruction, this handbook contains the following items:

1. **Classroom Strategies and Teaching Strategies** – related to student strengths and developmental needs, included in **Learning Preference Descriptions** (see pages 13-47)
2. **How to Use This Handbook** (see pages 7-11) - provides guidelines for improving instruction using knowledge about learning preferences.
3. **Class Learning Preferences Distribution form** (see Appendix B, pages 59-60) - to be used by teachers to record learning preferences for a class

The vocabulary level, examples and teaching recommendations found in this handbook are targeted primarily at students in middle schools, high schools, and post secondary institutions. The basic concepts also apply to students in elementary schools.

What Are Learning Preferences? →

The next section – **What Are Learning Preferences?** – will introduce you to the origins of learning preferences concepts and help you understand how learning preferences develop in individuals.

What Are Learning Preferences?

Discovering Individual Differences in the Classroom

Do you know students or teachers who fit the following descriptions?

Student: seldom asks questions or responds in class discussions, but written work is very thoughtful

Teacher: runs a tight ship – from the beginning of the term thoroughly plans all lectures, class activities, and assignments

Student: usually prefers working alone; not interested in working in groups

Student: involved in many activities, but may not finish projects or meet deadlines for class assignments

Teacher: teaches course content thoroughly and provides much factual information in lectures

Student: usually has interesting ideas and creative approaches to assignments

Teacher: values relationships and involves the class in many small group projects and discussions

Student: is very outgoing and enjoys class activities and field trips that involve working with other students

Anecdotes like these have been traded among both students and teachers many times. We usually view such comments as reflections of simple quirks of human behavior. A careful observer, however, may recognize behavior patterns in these and similar experiences that could be helpful in understanding differences among individuals.

Psychological Processes Basic to Individual Differences

The Swiss psychologist, Carl Jung, followed such a path in his research on psychological types. Jung began with the observation that individual differences arise in part from the dissimilar processes people use in perceiving and organizing their experiences. This observation helped Jung explain, for example, why individuals who had undergone the same experience expressed different versions of what happened and what it meant. Similarly, interpersonal misunderstandings often result from differences in perspectives among individuals employing very different psychological processes. Jung noted that differences among these processes appeared consistently across large numbers of individuals. The effects these differences have on behavior can be reliably described.

Psychological Processes →

Jung identified three sets of psychological processes. The first is Attitude – including Extraversion and Introversion. (In this handbook, we will substitute the term "Orientation" for Jung's term "Attitude.") The second is Perception – including Sensation and Intuition. The third is Judgment – including Thinking and Feeling. (In this handbook, we will substitute the term "Decision Making" for Jung's term "Judgment.") We shall add a fourth set of processes based on Jung's concept of Adaptation which includes Judgment and Perception. The following text briefly discusses each of these processes with some terminology adjustment to serve our purposes in this handbook.

Orientation →

ORIENTATION is a very important aspect of Jung's concept of Attitude. Some individuals are more oriented to the persons and events found in their external worlds. They are very active and outgoing, have many friends, and prefer doing things with other people. Jung named this type of orientation EXTRAVERSION. On the other hand, some individuals are more oriented to their inner thoughts and values. They are quiet observers who carefully consider their thoughts before speaking, and who prefer to work on their own. Jung named this type of orientation INTROVERSION.

Perception →

PERCEPTION: Some individuals pay primary attention to what they see as real or concrete in their experiences. They are excellent observers and appreciate the beauty that surrounds them. These individuals understand the value of facts and are good at discovering what works. Jung named this type of perception **SENSATION**. Other individuals pay more attention to the possibilities and symbolic meanings they see in their experiences. They appreciate the value of insights or hunches and are often imaginative in their work. Jung named this type of perception INTUITION.

Decision Making →

DECISION MAKING is a very important aspect of Jung's concept of Judgment. Some individuals use logic in making decisions. They tend to have firm convictions, to be serious and somewhat impersonal, and to value competence and fairness. Jung named this type of decision making **THINKING**. Other individuals base their decisions primarily on values. They are compassionate and concerned about human welfare. These individuals appreciate harmonious settings and collegial relationships with others. Jung named this type of decision making **FEELING**.

Adaptation →

ADAPTATION as defined by Jung includes **JUDGMENT** (Decision Making) and **PERCEPTION** as important processes. As we relate to the world around us, judgment and perception influence the ways in which we approach our everyday tasks. Individuals with a JUDGMENT perspective approach activities in a structured fashion; they appreciate well-planned schedules and clear expectations for their work. Individuals with a **PERCEPTION** perspective approach their activities with flexibility. They look forward to new experiences and value spontaneity and novelty. These differences in behavior are quite noticeable to teachers in the classroom.

The psychological processes Jung identified have a significant relationship to learning. By influencing Perception and Decision Making they affect cognition, help shape interest and motivation, and create behavior patterns having different impacts on learning.

← **Psychological Processes and Learning Differences**

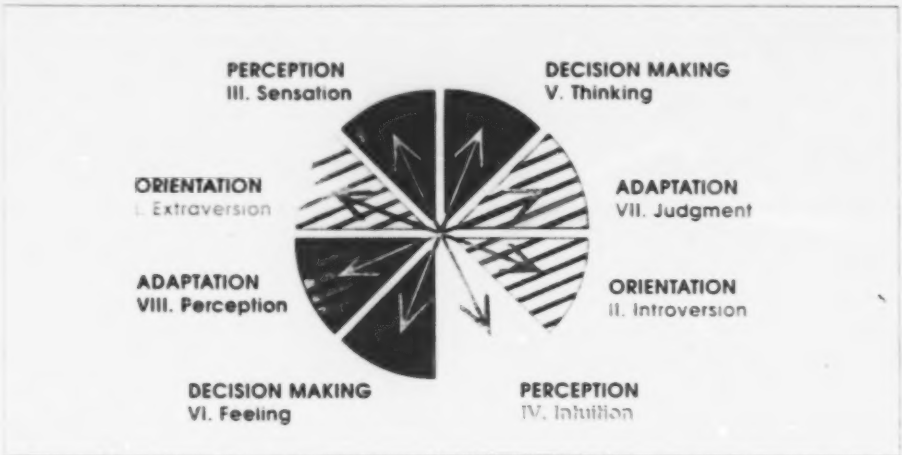


Figure 1. Circle of Colors

The Circle of Colors in figure 1 represents the underlying unity of the processes Jung identified. From these processes we have identified eight learning preferences. Each color wedge represents a preference. Wedges opposite each other represent preferences having a contrasting relationship.

← **Circle of Colors**

All of the learning preferences identified in figure 1 are active in each of us, but we favor certain preferences over others. These favored preferences are usually more developed; we are more experienced and feel more comfortable in their use. For example, students preferring Extraversion are active learners who enjoy working with others in groups, and who participate easily in class discussions. Students preferring Sensation excel in dealing with the facts of a lesson, prefer to learn material sequentially, and have a major interest in applying what they learn. Students preferring Judgment are well organized in their work, want to know what is expected of them, and meet assignment deadlines.

← **Learning Preferences and Learning Strengths**

Each learning preference is paired with another **contrasting** preference. By examining the definitions on page 4, you will see that the preferences Jung identified represent different ways of doing things. For example: if Extroversion is clearly preferred, Introversion is not. A person who is experienced in and who feels comfortable with extraverted behaviors, is less experienced and feels less comfortable with introverted behaviors. The opposite is true when Introversion is clearly preferred. These differences have real implications for learning: one student speaks easily in class, the other volunteers a response only after carefully considering the question; one enjoys working in groups, the other prefers working alone on independent projects; one considers what other people say as important or interesting, the other is often unconcerned about what other people think.

← **Learning Preferences and Learning Differences**

Learning Preference Development →

Our preferences (which eventually become our learning strengths) begin to emerge in infancy and usually develop by early adulthood. Generally, Extraversion and Introversion are the first preferences to emerge, and are often identifiable in early childhood. One of the Perception (Sensation, Intuition) or Decision Making (Thinking, Feeling) preferences emerge as a primary process later, sometimes as early as the upper elementary school years. An Adaptation preference also develops during the late elementary or middle school years. By late adolescence or early adulthood, a second Perception or Decision Making preference emerges to complement the first. It is not clear how these preferences develop. They may result from a complex relationship between biological factors and the environment.

Integration of Learning Preferences →

The human mind functions as an integrated psychological system. Although each of us develops strengths selectively with a few preferences, the remaining preferences are active in a less-developed state. They often display themselves in learning deficits or in less effective work habits. Since all preferences represent processes that are important in everyday life, we must acquire acceptable levels of experience in our less-developed preferences. Students can benefit from assignments that help them address these less-developed preferences.

Significance of Teacher Learning Preferences in the Classroom →

Teachers must understand how their own learning preferences influence their teaching and their attitudes toward students. Generally, our teaching methods reflect our own learning strengths. Unconsciously, we may assume the way we learn is "what learning really is." In effect, we teach those processes we understand better in ourselves. As a result, our teaching may be very effective for students whose preferences parallel ours. On the other hand, we may find it difficult to recognize preferred learning modes in those students with preferences very different from ours. Therefore, we may not be effective in helping them deal with their learning situations.

Teacher Learning Preferences in Team Teaching →

Team teaching can also be affected by different teaching approaches resulting from differences in teacher learning preferences. These differences can strengthen the team if they are built into the team's instructional process. Otherwise, these differences may contribute to misunderstanding among team members.

Further Readings →

For further readings on psychological type and learning preferences, see **Appendix E – Readings on Psychological Type and Learning Preferences** – page 71.

How to Use This Handbook →

The next section – **How to Use This Handbook** – will help you understand your learning preferences as a teacher. It also illustrates ways to use information about learning preferences to help you work more effectively with students.

How to Use This Handbook

←

← Introduction to Learning Preferences

With experience, you will find many ways to apply learning preference concepts to your teaching. This chapter outlines the following two approaches with which to begin:

- **Understanding Your Learning Preferences as a Teacher** – helps you recognize your own learning preferences and how these affect your teaching
- **Problem-Solving Learning Issues** – illustrates the application of learning preference concepts to helping individual students and to developing teaching strategies that address learning preference differences in the class

Understanding Your Learning Preferences as a Teacher

← Complete the Checklist

Complete the **Individual Learning Preferences Checklist** (see pages 53-55). Carefully follow the scoring instructions provided.

← Study Your Preference Descriptions

Using the Contents, locate and study the descriptions of the preferences the Checklist identifies for you. Remember, the Checklist scores are an **estimate** of your preferences. These scores are not 100 percent accurate and do not represent "absolute truth."

← Validate Your Preferences

Validate your preferences as indicated by the Checklist. Do this in terms of your own experiences and by:

- carefully reading the descriptions for the preferences you have chosen, and
- reflecting on your own learning experiences.

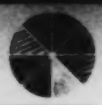
← What about Uncertain Preferences?

If you are uncertain about a preference identified by the Checklist, read the description for the opposite preference. Determine which description is more accurate for you. For example, if you are undecided between Extraversion and Introversion, read both descriptions to see if one "fits better" than the other.

Do not be concerned if you are still uncertain about a preference. Many individuals find that one or more preferences are not clear. As you continue to observe and reflect on your learning processes, your learning preferences become easier to identify.

← Understanding other Preferences

Study the remaining learning preference descriptions. It is important to understand how your learning preferences relate to other learning preferences.



Problem-Solving Learning Issues

The most effective and practical use of learning preference concepts occurs when meeting the learning needs of individual students and in designing specific instructional class activities.

APPLYING LEARNING PREFERENCE CONCEPTS TO AN INDIVIDUAL STUDENT

Help Individual Students →

Learning difficulties for an individual student often result when the student's learning preferences are less compatible with the concept being learned or with the teaching strategy. In these cases, it is important to develop learning strategies complementing the student's learning preferences.

Administer Checklist to the Student →

Administer the **Individual Learning Preferences Checklist** to the student. Carefully follow the instructions provided.

Score the Checklist →

Students can score the Checklist by carefully following the instructions. Share with students their learning preferences identified on the Checklist by using the **Student Learning Preferences (LP) Worksheet** (see Appendix A on pages 57-58).

Have Students Complete the Student Worksheet →

Ask students to transfer the high score for each set of preferences (on the Checklist) onto the appropriate section of the Student LP Worksheet. Then have students copy the Checklist items that most accurately describe how they learn. For example, in the ORIENTATION set, if the Extraversion score is high, the student should write this score in the appropriate blank on the Student LP Worksheet. Then the student should copy the Extraversion items that are most accurate for him or her.

Validate the Student's Learning Preferences →

Hold an individual conference with each student. Review the information from the Student LP Worksheet. Discuss the learning preference descriptions identified by that student on the Checklist. Ask the student to reflect on her or his learning experiences to determine if the descriptions are accurate. If a particular preference is uncertain, ask the student to read the description of the opposite preference to determine if it is more accurate. If the student is still uncertain, recognize that the student's preference may not be clear. Emphasize to the student that this is an acceptable circumstance. Suggest that the student occasionally examine her or his learning experiences to determine if an identifiable preference does emerge.

Design Compatible Learning Activities →

Classroom Strategies and Teaching Strategies are both included in each Learning Preference discussion. You can find suggestions for dealing with a student's learning problem by consulting the discussions for each of the preferences identified by the student. See the following examples:

← Example

Many students have difficulty grasping specific constructs. If a student prefers Sensation, divide the construct into component concepts or segments. Accompany each segment with an illustration or demonstration that the student can manipulate. Present the segments and illustrations in sequential order, moving from basic content to complex. Gradually build a view of the complete construct; when possible illustrate the complete construct in action.

← Example

Some students have difficulty scheduling their time to meet deadlines. If a student prefers Perception, have the student identify the tasks necessary to complete the assignment, estimate the time needed to complete each task, consider all other activities, and finally, establish a realistic schedule by planning backward from the deadline. The student must envision component tasks in manageable sizes and with realistic time estimates. Ask the student to write out the schedule. He or she must focus on completing one task at a time and not become confused by the complexity of the total assignment. Also, the student must not be interrupted by a natural inclination to respond to nearby activities.

APPLYING LEARNING PREFERENCE CONCEPTS TO DESIGNING LEARNING ACTIVITIES FOR A CLASS

← Design Learning Activities for a Class

Learning activities appropriate for a given class must reflect the learning preference differences of students within that class. After identifying the learning preference differences in a class, use this knowledge to design learning activities that address these different preferences.

← Administer Checklist to the Class

Administer the Individual Learning Preferences Checklist to your class. Follow carefully the instructions given with the Checklist.

← Score the Checklist

The students can score their own Checklists by carefully following the instructions. For help with score interpretations, consult **Using The Individual Learning Preferences Checklist** on pages 49-52. Appendix B on page 59 contains a **Class Learning Preferences Distribution** form for recording class preferences. This form, when completed, helps to identify the preference distribution within the class.

← Validate Student Learning Preferences

Validating student preferences involves a class discussion of preference descriptions and Checklist scores. Include the following in this discussion:

- Review preference descriptions with the class.
- Review guidelines for interpreting scores.
- Ask the students to complete the Student LP Worksheet. Group students with similar preferences and have them discuss the relationships between the preference descriptions and their individual learning experiences.
- Have students report validated preferences to the teacher. Use this information to update your knowledge of preference differences in the class and to plan instruction.

Design Compatible Class Learning Activities →

Each Learning Preference discussion lists Classroom Strategies and Teaching Strategies. Find suggestions for approaching preference differences in your class by consulting the discussions for each of the preferences identified by the class. Note activities that address these different preferences. Three general approaches are illustrated in the following text:

Manage Activities to Include Different Preferences →

1. **Instructional activities can be conducted to draw contributions from students with different preferences.**

Example →

Ask students who prefer Introversion to complete tasks requiring an in-depth approach, such as finding sources in the library and extracting important information from them. Ask students preferring Extraversion to complete tasks requiring a more active role, such as interviewing resource people and arranging site visits. Finally, ask students preferring Judgment to lead in planning activities.

Example →

Students with different preferences can take on important complementary roles in group discussions or reports. For example, students preferring Sensation can pay particular attention to the applied aspects of a project or discussion. They can maintain the soundness of the factual base for the group's work. In addition, students preferring Intuition can lead in identifying alternatives and examining possible outcomes. Those individuals preferring Perception can arrange to explore additional sources of information. Students preferring Thinking can make a special note to challenge the rationale behind the group's work. Finally, students preferring Feeling can press for a collegial working relationship within the group, and for including societal issues in the discussions.

Offer Alternative Assignments to Reach Different Preferences →

2. **Offer alternative assignments for the same instructional goal; design these activities to appeal to students with different preferences.**

Example →

Independent studies, group problem-solving activities or simulations, lab or field experiments, and site visits including discussions with resource people might all be applicable to a given concept or instructional unit. Each activity would attract students with somewhat different learning preferences. Independent studies would be particularly interesting to students preferring Introversion or Thinking. Group problem-solving activities would appeal to students preferring Extraversion, Intuition, Feeling, or Perception. Experiments would interest students preferring Introversion, Sensation, Thinking, or Judgment. Site visits would appeal to a wide range of learning preferences. Each activity would yield a somewhat different learning outcome, but could be designed to cover similar material. If shared with the class, the outcomes of these activities could broaden the learning of all class members.

3. **Design a multifaceted activity that incorporates the different learning preferences in the class.**

   A group project may be the best overall strategy for a given concept or unit of instruction. Students preferring Extraversion and Feeling will enjoy this kind of activity; students preferring Introversion and Thinking may want to work alone. A possible solution to this problem is to design the activity to include individual contributions to the group project. Establish criteria and monitor performance for individual projects as well as for the group project.

← **Diversify Activities to Reach Different Preferences**

← **Example**

As you familiarize yourself with these learning preferences and ways to use this information in your classes, we strongly recommend you begin with one process at a time: Orientation, Perception, Decision Making, or Adaptation. Study the opposite preferences in that process and begin by using a few of the related teaching strategies. **Appendix C – Summary of Learning Preferences with Illustrative Implications for Learning** (see pages 61-65) – provides additional information that can help you understand the relationships between learning preferences and learning behaviors.

← **Begin Using One Preference at a Time**

The next section – **Learning Preference Descriptions** – provides descriptions of student and teacher behaviors related to each preference. It includes Classroom Strategies and Teaching Strategies with each preference discussion. These strategies can be used effectively with students having the same preference. This section also lists strategies reflecting developmental needs often faced by students with that preference.

← **Organization of Learning Preference Discussions**

Teacher Notes

Learning Preference Descriptions

"Sensation establishes what is actually present, Thinking enables us to recognize its meaning, Feeling tells us its value and Intuition points to possibilities as to whence it came and whither it is going in a given situation"

(Jung 1976, p. 540)

Learning Preference Descriptions

Introduction →

The learning preference descriptions include four pages of discussion for each preference. Each page is organized as follows:

Preference Similarities →

The **Preference Similarities** page contains descriptions of student and teacher behaviors based on a given preference (figure 2, columns A and C). The center of the page (column B) lists characteristics associated with each set of descriptions.

Color Graphics →

The color graphics are to assist you in understanding the dynamics of the preferences. They also serve as a quick reference for locating material on a particular preference. Each graphic is described below and illustrated in figure 2.

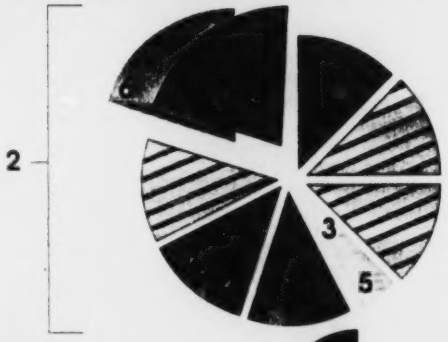
1. The **color bar** at the top of the page indicates the preference being discussed. This color is used throughout this handbook whenever that preference is discussed.
2. The **circle of colors** represents the underlying psychological unity of the learning preferences. Each **wedge** represents one of the eight preferences.
3. **Wedges** directly across the circle from each other represent contrasting preferences.
4. The **large wedge** pulled out from the circle of colors and the **small wedges** at the tops of columns A and C represent the preference being discussed.
5. The **smaller wedge** in the circle of colors represents the preference in contrast to the preference being discussed.
6. When a student preference is being discussed, the **wedge** in the circle of colors is both **larger and shaded**.

Perception Process Similarities

SENSATION

The Sensation Preference in Learning and Teaching in the Classroom

Students preferring **Sensation** look for what is real and concrete. They value facts and search for what works.



A	B	C
Students Preferring Sensation		***Teaching for Sensation***
▼ respond to the sensory qualities of objects and events	**Sensation** ↔	▼ utilizes teaching materials, readings, and activities that are rich in color, sound, touch, and movement

Figure 2. Key to Preference Similarities pages

The **Preference Differences** page illustrates potential difficulties that can arise when teachers and students have contrasting preferences (see page 17 for an example).

← **Preference Differences**

As in figure 2, the left and right columns list student and teacher descriptions. The center column lists characteristics demonstrating the preference differences associated with each set of descriptions.

The scenario at the bottom of the Preference Differences page portrays potential difficulties that can arise when teacher and student have different preferences.

← **Scenario**

The color graphics are similar to those on the **Preference Similarities** page. However, there is one exception: the smaller wedge representing the other preference being discussed is also pulled out from the circle of colors (see D in figure 3).

← **Graphics**

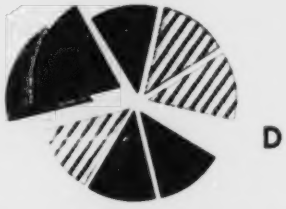


Figure 3. On the Preference Differences pages, the second preference being discussed is represented by a smaller wedge which is also pulled out from the circle (see D).

The **Examples of Classroom Strategies** page lists examples of strategies that are effective when working with students having the described preference.

← **Classroom Strategies**

The **Teaching Strategies** page lists specific teaching activities that are effective when working with students having the described preference. These lists include the following:

← **Teaching Strategies**

- **Learning Strengths**: Students possessing a particular preference learn best through activities reflecting their Learning Strengths.
- **Cautions**: Follow these suggestions, and the learning activities listed may be more successful with students having a particular preference.
- **Developmental Needs**: Learning activities listed in this section represent skills that are more difficult for students having that preference.

The color bar and circle of color at the top of each page indicate the preference being discussed.

← **Graphics**

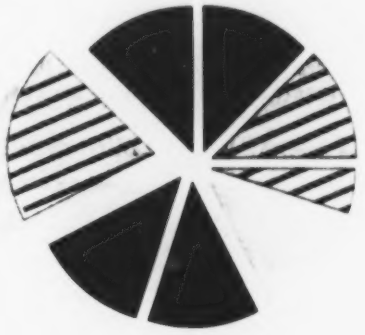
The **Learning Preference Descriptions** begin on the following page with a discussion of Extraversion.

← **Learning Preference Descriptions**

Orientation Process Similarities

The Extraversion Preference in Learning and Teaching in the Classroom

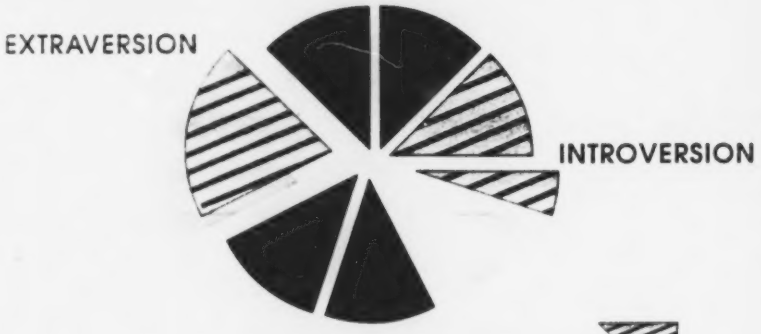
Students preferring Extraversion turn their attention and energy to the world around them. They prefer active situations and involvement with people for their learning experiences.



Students Preferring Extraversion		*Teaching for Extraversion*
▼ are interested in interacting with the individuals, objects, and activities around them	**Experience** ⟷	▼ provides students with opportunities to interact with objects, people, and situations as they learn
▼ become more energetic as they are involved in activities; take charge of an activity	**Enthusiasm Action** ⟷	▼ helps students manage their enthusiasm; provides structured activities to help channel interests and energy
▼ are primarily interested in applying what works in the world around them	**Application** ⟷	▼ focuses lectures, activities, and demonstrations on using concepts
▼ are interested in many topics; may have brief attention spans	**Breadth Attention Span** ⟷	▼ emphasizes breadth of coverage and focuses in less depth on specific topics
▼ are noticed because they are active; frequently talk to other people; respond more quickly to teacher's questions	**Communication** ⟷	▼ understands that students' outgoing behavior is an expression of a learning preference rather than a disruption; helps students monitor their talking behavior
▼ are readily adaptable; adjust to existing conditions with comparative ease	**Adjustment** ⟷	▼ provides students with opportunities to experience a variety of learning settings and activities
▼ tend to ignore inner thoughts and feelings as they become involved in external activities	**Externalization** ⟷	▼ helps students reflect on inner concerns and explore subjective responses

Orientation Process Differences

Different Preferences in the Classroom: Some Issues Between Extraversion in Learning and Introversion in Teaching



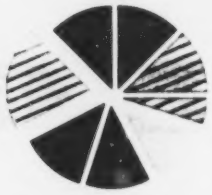
Students Preferring Extraversion		*Teachers Preferring Introversion*
▼ are physically active and communicative; learn best from a variety of experiences and from working with others	**Active** ← **Quiet** →	▼ prefer to be in control of activities; to have a quiet atmosphere in the classroom for concentration and contemplation
▼ are usually interested in what they have seen, noticed, or heard from others	**Externalize** ← **Reflection** →	▼ may expect students to discuss their particular individual reflections on class topics
▼ prefer to begin learning with activities providing experience with concepts; then relate these experiences to concepts and principles	**Experience** ← **Ideation** →	▼ begin class by lecturing on basic concepts before illustrating these concepts; frequently devote more time to lectures and less time to activities
▼ are easy to know; eager and willing to share feelings, attitudes, and information	**Communicative** ← **Introspective** →	▼ are introspective; may seem difficult to know and understand personally; prefer privacy

The following scenario illustrates differences in ORIENTATION between Extraversion in learning and Introversion in teaching.

Juan is enthusiastic about school and approaches his math class with considerable interest. However, he finds it difficult to concentrate on the teacher's explanations and instructions. He thinks they are long and drawn out. Juan prefers to see sample problems on the board first; to ask questions and talk about them; and then to try working the problems. Although he might make mistakes, he wants to gain experience with the problems. Juan understands problems better if he works on them first in class, and then relates them to math concepts. Interaction in class is helpful for him.

The teacher expects students to be well prepared and to take time to approach mathematics in some depth. He wants to be certain students understand the concepts behind math computations. With this goal in mind, he carefully explains and discusses problems the class will be doing before illustrating them on the board. He expects students to be quiet, to listen, and to follow instructions.

Orientation Process



Examples of Classroom Strategies for Students Preferring Extraversion

Experience → Integrate readings, lectures, and demonstrations with activities such as projects, experiments, field trips, role playing, and team games. Hold informal discussions in both small and large groups to process the meaning of these experiences. Establish clear expectations for learning outcomes.

Enthusiasm → Help students manage their energy and enthusiasm. For example, put students preferring Extraversion in charge of group activities. Give them specific responsibilities, such as assigning and monitoring tasks, leading group discussions, or reporting to the class. Help these students discipline their talking and activities to protect class time and teacher time intended for students who are naturally less outgoing.

Application → Give assignments that challenge students to use what they are learning while they work on existing problems. Apprenticeships or other mentoring relationships can increase student involvement in learning. Generally, students preferring Extraversion value working in a group. Improve group effectiveness by introducing team-building, interpersonal communication, and problem-solving techniques.

Breadth → Students preferring Extraversion maintain interest when teachers emphasize the major aspects of a topic, but may lose interest when asked to focus in depth on specific concepts. Therefore, emphasize breadth of content, but provide students with opportunities to integrate ideas, experiences, and concepts. For example, illustrate each concept with an applied example clearly showing that concept in action.

Adjustment → Challenge students to deal with new learning opportunities. Use the greater adaptability of students preferring Extraversion to help other students adjust to a new group challenge. For example, while on a field trip, give the more outgoing students the responsibility of introducing guests, planning activities, or volunteering to try new tasks first.

Communication → Create learning activities allowing students to use their propensity to talk in useful ways (e.g., group projects and discussions, oral reports, and presentations). Since not all talking behavior is effective learning, challenge students to limit their talking to the current task. Provide structured discussion groups, establish clear expectations for outcomes (e.g., oral reports), and make students responsible for leading group discussions and focusing outcomes.

← **Externalization**

Provide opportunities for students to reflect on the meaning of their experiences. If given the proper space and time, students preferring Introversion could take the lead and share their reflections. Students preferring Extraversion must be quiet, listen to what others are saying, and stay on task to share their reflections. Recognize that students preferring Extraversion focus on external activities, conversations, and relationships. Find ways to encourage reflection, private time, and individual creative work.

An Example of Strategies for Solving the Problems of Opposite Preferences

←

STUDENTS PREFERRING EXTRAVERSION NEED	TEACHERS PREFERRING INTROVERSION WILL
Hands-on experience	Begin class by lecturing on basic concepts
To be physically active	Exercise considerable control over class activities
To interact with other students while working	Prefer a quiet atmosphere for concentration
To deal with course content in breadth	Review course content in depth

To resolve these differences, the teacher preferring Introversion should vary instruction to include strategies such as problem-solving teams, group projects, work groups, and group discussions. Establish clear expectations for these activities before the lesson; then monitor group progress.

Teaching Strategies for Students Preferring Extraversion

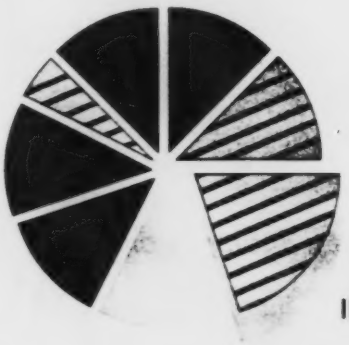
←

LEARNING STRENGTHS	CAUTIONS
Group activities and discussions	Lectures and assignments: keep instructional content in short segments
Informal classroom discussions	Films/video tapes: shorter films, focus on applications
Demonstrations	
Field trips	
Role playing	
Peer teaching	**DEVELOPMENTAL NEEDS**
Team games	Reflective thinking
Video/Films	Individual creative work
	Quiet time: no talking
	Solitary activities, projects

Orientation Process Similarities

The Introversion Preference in Learning and Teaching in the Classroom

Students preferring **Introversion** are quiet students. They want privacy and solitude; they pursue their own thoughts carefully before responding to assignments, discussions, or activities.

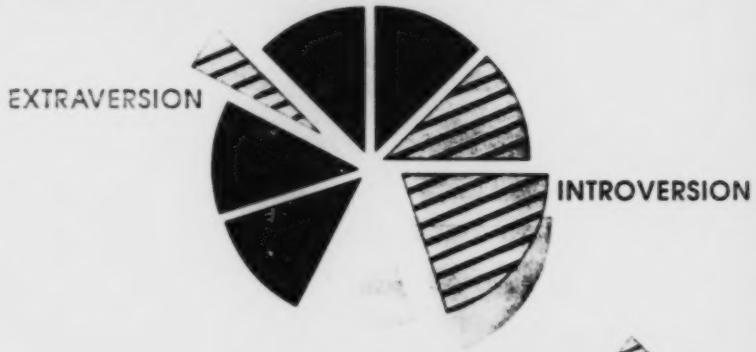


INTROVERSION

Students Preferring Introversion		*Teaching for Introversion*
▼ respond to ideas, assignments, and classroom situations in terms of their introspective views	**Introspection** ↔	▼ encourages students to develop individual approaches to assignments or projects
▼ carefully consider issues and questions before speaking or taking action; are quiet and often respond slowly to class discussions and activities	**Reflection** ↔	▼ allows students time to reflect inwardly before responding to classroom questions or activities
▼ prefer to be well prepared before responding to questions or sharing their work	**Preparation** ↔	▼ gives students time to complete assignments
▼ usually pursue a few topics in depth	**Depth** ↔	▼ gives students time to pursue areas of interest in depth
▼ are intrinsically interested in forming and working with ideas	**Ideation** ↔	▼ encourages students to concentrate on conceptual aspects of course content
▼ may appear irritated or stressed by continual talk around them; prefer quiet	**Quiet** ↔	▼ understands that ongoing interaction can be tiring; maintains quiet times; provides quiet settings for work
▼ prefer assignments allowing them to work on their own; may not wish to participate in group activities	**Independence** ↔	▼ understands that pursuit of learning based on introspective orientations requires the freedom of independent work

Orientation Process Differences

Different Preferences in the Classroom: Some Issues Between Introversion in Learning and Extraversion in Teaching



Students Preferring Introversion		*Teachers Preferring Extraversion*
▼ prefer subjects to be taught in depth; need time to contemplate lecture content	**Depth** ← **Breadth** →	▼ emphasize a broad coverage of ideas and concepts in lectures and reading assignments
▼ prefer quiet, controlled class and study time	**Quiet** ← **Communication** →	▼ often permit talking and casual activity during class and study hall
▼ appreciate class activities, discussions, and assignments that allow time for reflection and preparation	**Reflection** ← **Action** →	▼ may encourage unanticipated discussions or in-class activities
▼ prefer to work on and receive credit for individual efforts	**Independence** ← **Experience** →	▼ emphasize the value of group projects and assignments

The following scenario illustrates differences in ORIENTATION between Introversion in learning and Extraversion in teaching.

Amee is a very quiet, cooperative student. She is pleasant toward teachers and other students, and usually finishes her work. Her teachers sometimes think Amee is withdrawn. She always responds when teachers call on her, but she does not participate spontaneously in discussions. At times she is so quiet that other students wonder if she is avoiding them. Only a few students know Amee very well, and they are her friends.

Amee's Social Studies teacher is concerned that Amee may not benefit from many of the opportunities to join school groups or participate in activities. During class he often attempts to involve Amee in discussions about interesting topics and activities. Each week he provides opportunities for students to participate in activities dealing with class topics. To interest Amee, the teacher is eager to suggest options for activities, and to accept suggestions from her. Sometimes he has difficulty understanding why Amee seems satisfied to work on her own and with her own focus. However, he is pleased to discover how complete and thorough her prepared lessons usually are.

Orientation Process

Examples of Classroom Strategies for Students Preferring Introversion

Introspection → An introspective orientation often produces viewpoints that are not readily clarified and are often unique or original. Encourage students to examine, develop, and express their introspective viewpoints through assignments and projects that value individual contributions and allow independent work. Manage class discussions in ways that entertain and explore divergent perspectives.

Reflection → Conduct class activities and discussions so students have time to reflect before responding. As needed, take steps to prevent monopolizing of class time by students who respond quickly and are more conversational.

Preparation → When conducting activities in class, give students time to work before being asked to respond. Manage out-of-class assignments so that students have time to pursue the content in depth.

Depth → Structure assignments and class activities so students can pursue topics in greater depth. Provide reading materials and lectures that focus more thoroughly on concepts, facts, case materials, and illustrations. Since these students do in-depth work, include them as a class resource through oral and written reports. Have them chair research teams, lead class discussions, and participate in panel discussions.

Ideation → Be certain that readings, lectures, and discussions focus sufficiently on ideas and concepts. Draw upon the talents of these students to highlight conceptual aspects of course content through oral reports, panel discussions, experiments, and demonstrations.

Quiet → Provide quiet periods for individual work. Make certain that references and other reading materials are available in areas providing a private, quiet work space. Breaks in class discussions and activities provide students with opportunities to find a "quiet time" for reflection.

Independence → Provide opportunities for students to work independently. Manage your teaching time so you can monitor students' progress and serve as a mentor for their work. Provide opportunities for interaction with fellow students.

An Example of Strategies for Solving the Problems of Opposite Preferences

STUDENTS PREFERRING INTROVERSION NEED	TEACHERS PREFERRING EXTRAVERSION WILL
To cover a few topics in depth	Cover many topics in breadth
To work in quiet settings that permit concentration	Emphasize classroom activities and student interactions
Time for reflection and careful preparation	Expect students to respond freely in discussions
To pursue independent work	Emphasize group projects and assignments

A teacher preferring Extraversion has some options for resolving differences. Experiment with strategies to provide additional material that students can pursue in depth for extra credit. Also, provide alternative assignments that allow students to choose an approach which they can pursue in depth. Allow time for students to fully pursue their work and, if necessary, help them find quiet work settings. As their work progresses, develop discussion activities requiring them to interact more fully with their classmates. Expect them to communicate their completed work through oral reports, demonstrations, and discussions that permit sharing of in-depth, well-prepared work.

Teaching Strategies for Students Preferring Introversion

LEARNING STRENGTHS	CAUTIONS
Independent study	Class discussion: allow reflection time
Lecture: provide depth	Assignments: allow time for reflection and preparation
Models, figures, diagrams	Resource people: provide guidelines for contacts
Reference materials	Supervised study: allow freedom for independent work
Research projects	
Experiments	
Quiet study time	
Handouts	

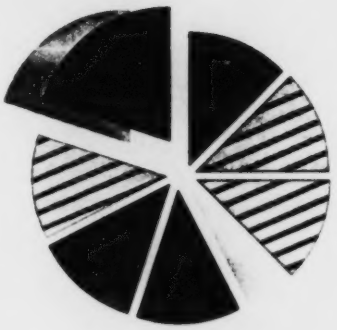
DEVELOPMENTAL NEEDS

Group activities
Consensus decision making
Group problem solving
Group leadership experience
Public presentations and reports

Perception Process Similarities

The Sensation Preference in Learning and Teaching in the Classroom

Students preferring **Sensation** look for what is real and concrete. They value facts and search for what works.



Students Preferring Sensation		*Teaching for Sensation*
▼ respond to the sensory qualities of objects and events	**Sensation** ↔	▼ uses teaching materials, readings, and activities that are rich in color, sound, touch, and movement
▼ pay attention to what is "real" in their experiences; what they see, hear, taste, smell, and touch	**Realism** ↔	▼ uses materials and illustrations reflecting everyday experience and provide realistic presentations of facts and concepts
▼ expect to be taught an established, organized body of knowledge; appreciate thoroughness	**Sequence** ↔	▼ carefully arranges subject matter in clear, sequential patterns which present materials step-by-step using a basic-to-complex rationale
▼ focus on facts and the exact meanings of ideas; appreciate precision	**Fact/ Precision** ↔	▼ presents facts in uncomplicated formats; clearly defines concepts
▼ want to know what works; expect to be taught what authorities agree is functional and true	**Validity/ Applicability** ↔	▼ clearly demonstrates the validity and applicability of what is taught
▼ respond to the details in lesson content; require sufficient time to assimilate implications	**Thoroughness/ Time** ↔	▼ illustrates elements within patterns; gives students time to assimilate complexity; teaches pattern transfer
▼ expect to learn well-defined, thoroughly explained sets of skills; expect step-by-step instructions	**Skill** ↔	▼ provides a rich pattern of skill-related experiences with carefully planned and illustrated instructions

Perception Process Differences

Different Preferences in the Classroom: Some Issues Between Sensation in Learning and Intuition in Teaching

Students Preferring Sensation		*Teachers Preferring Intuition*
▼ tend to reject concepts not supported by facts; expect unambiguous definitions	**Fact** ← **Possibility** →	↗ deal with the implications of facts, relationships, and possibilities
▼ develop understanding of patterns by working step-by-step through detailed aspects of the patterns	**Sequence** ← **Complexity** →	↗ work with patterns and abstractions; may overlook important details related to these patterns
▼ attend to details in learning materials, readings, and lectures; require time to assimilate implications and relationships	**Thoroughness** ← **Framework** →	↗ attend primarily to conceptual patterns in lessons; may move quickly from one concept to another
▼ prefer to see a lesson illustrated in real-life terms	**Applicability** ← **Abstraction** →	↗ use illustrations that reflect abstract concepts and are less apt to reflect real-life experiences

The following scenario illustrates differences in PERCEPTION between **Sensation** in learning and **Intuition** in teaching.

Evette is an intelligent, dedicated student. She does well in school, although she often receives lower grades than her efforts warrant. Her class work frequently seems off-target. Evette feels that the teacher does not give clear assignments. She often does not know what is expected of her or how to proceed. Although she understands the material, Evette is often confused and sometimes gives wrong answers. Consequently, she becomes discouraged and sometimes feels like a failure.

The teacher explains the lesson several ways, gives possible applications, and encourages the students to develop their own topics for reports. She does not realize that Evette does not have enough specific information to understand the assignment nor to select an interesting approach. Evette needs examples and the steps required to complete the assignment.

Perception Process

Examples of Classroom Strategies for Students Preferring Sensation

Sensation → Select learning materials and readings illustrated in full, high-quality color accompanied by quality sound, if relevant. Use learning activities that involve touching, handling, operating, dismantling, and assembling the objects being studied. Examples of such learning activities and demonstrations include quality videos and films, field trips, experiments and demonstrations conducted by students and in which students participate, "hands-on" museum exhibits, role playing, and simulations. Integrate direct instruction and discussions of facts, processes, and concepts into these activities.

Realism → When possible, identify and use in instruction those everyday experiences that incorporate the facts, concepts, and processes to be learned. In some cases, this means using everyday experiences as illustrations. In other cases, it means using real life activities and equipment directly in instruction, such as "walkabout" experiences, apprenticeships, and on-the-job training.

Sequence → When developing instruction, carefully analyze the content and conceptual structure of the material to be learned. Organize the content into hierarchical patterns that move step-by-step from basic to more complex material. Present these patterns sequentially, allowing sufficient time for students to assimilate the content at each stage.

Facts/ Precision → Students preferring Sensation respect the value of facts. For these individuals, successful learning is based on a complete understanding of the facts involved. It is helpful to present facts in tables, charts and graphs, or texts. State concept meanings clearly and unambiguously; carefully outline issues; and clearly communicate the author's or instructor's intent.

Validity/ Applicability → Always present evidence supporting the validity of what you are teaching. This includes evidence from different sources corroborating the "truth" of knowledge, as well as evidence supporting the competence of the sources. Establish the applicability of knowledge by using evidence and demonstrations.

Thoroughness/ Time → Students preferring Sensation learn concepts by assimilating, step-by-step, the facts relevant to those concepts. Therefore, carefully illustrate all concepts. Give students practice in identifying patterns and transferring pattern meanings to other contexts. Vary contexts of the illustrations to demonstrate different applications or relationships among concepts. Give students sufficient time to cover all the materials.

Skill → Organize skill development tasks hierarchically. Provide demonstrations with carefully planned and illustrated instructions.

An Example of Strategies for Solving the Problems of Opposite Preferences

STUDENTS PREFERRING SENSATION NEED	TEACHERS PREFERRING INTUITION WILL
Factual evidence to support concepts	Focus on possibilities and relationships
To assimilate content step-by-step	Work with patterns and abstractions
Time to deal with complexity	Move quickly among concepts
To relate learning to real life	Focus on theoretical and speculative applications

To resolve these differences, the teacher preferring Intuition should provide students with well-organized, well-illustrated, sequential material – whether in lectures, readings, or activities. Give students time to assimilate the facts and concepts in these materials. Include experiences in pattern recognition and interpretation of concepts in various contexts (pattern transfer). As students feel confident with the basic concepts, introduce experiences that require divergent thought processes, such as identifying possibilities, exploring unusual relationships among concepts, and playing with speculative applications. Manage group activities and class discussions so that students preferring Sensation feel comfortable in participating in these less familiar cognitive tasks.

Teaching Strategies for Students Preferring Sensation

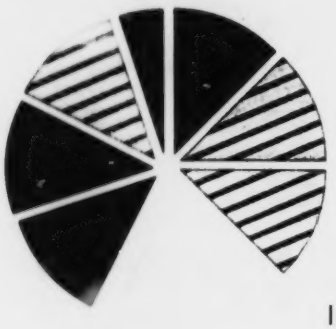
LEARNING STRENGTHS	CAUTIONS
Group discussions	Lecture/discussion: applied and to the point
Practice	Objective tests: allow time for students to complete at their own pace
Field trips	Time: permit students additional time, if needed, to complete assignments and tests
Role playing	
Small group projects	
Simulations and games	
Checklists	
Clear expectations and criteria for evaluation	
Demonstrations and physical manipulation of equipment	
Methodical, hierarchical ordering of skills and content	
Real-life illustrations	
Convergent thinking	
Application activities	

DEVELOPMENTAL NEEDS
Pattern transfer and organizing
Divergent thinking
Categorizing
Focusing on concepts rather than details
Developing autonomous thinking
Embracing theory

Perception Process Similarities

The Intuition Preference in Learning and Teaching in the Classroom

Students preferring Intuition work from insights and hunches. They are intrigued by new possibilities and often get new ideas; however, they may overlook important details.

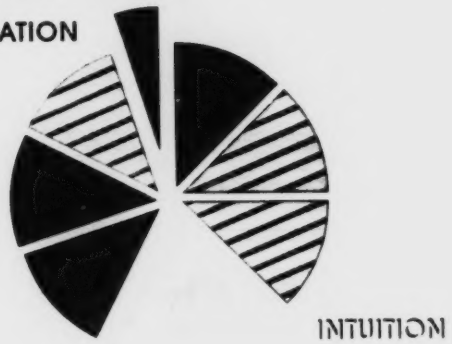


INTUITION

Students Preferring Intuition		*Teaching for Intuition*
7 search first for a comprehensive view of the subject matter; this view serves as a framework for organizing smaller units of material	**Framework** ⟷	7 begins with a comprehensive view of the subject matter
7 possess a quickness of response based on hunch or insight	**Insight** ⟷	7 includes assignments that challenge students' imagination
7 respond to the abstract and symbolic aspects of a subject	**Abstraction** ⟷	7 provides assignments that reflect student interests in the abstract and symbolic
7 infer seemingly obscure relationships among facts and ideas; see possibilities in each new situation	**Possibility** ⟷	7 provides opportunities for students to infer relationships and to explore possibilities
7 place major value on their own insights; may encounter conflict with assumptions or expectations held by others	**Autonomy** ⟷	7 encourages students to express and examine insightful ideas and hunches
7 prefer the complexity of new ideas and developments; are bored by routine; may overlook details of tasks	**Complexity** ⟷	7 helps students clarify and evaluate new ideas; helps students attend to routine and necessary details of tasks
7 are motivated by insights difficult to anticipate; often work with bursts of energy and unpredictable timing	**Adaptability** ⟷	7 helps students honor insight processes; allows flexibility in work schedule; encourages self-paced learning

Perception Process Differences

Different Preferences in the Classroom: Some Issues Between Intuition in Learning and Sensation in Teaching



Students Preferring Intuition		*Teachers Preferring Sensation*
7 respond to aspects of a lesson that stimulate their thoughts, but may ignore the remaining aspects as given	**Autonomy** ⇐ **Sequence** ⇒	▼ present factual, precise, and sequential lessons; focus on lesson details
7 tend to work in bursts of energy and often exhibit flexible work habits	**Adaptability** ⇐ **Thoroughness** ⇒	▼ expect assignments to be completed thoroughly and on time
7 often grasp the overall concept of a lesson but sometimes ignore important details	**Framework** ⇐ **Fact** ⇒	▼ assume that students do not understand the lesson if they have not learned the important details
7 may be bored and need more opportunities than a lesson permits to explore possibilities	**Possibility** ⇐ **Applicability** ⇒	▼ lead well-organized, predictable class discussions; focus on applied results

The following scenario illustrates the differences in PERCEPTION between Intuition in learning and **Sensation** in teaching.

Jim is a bright college student who enjoys most of his courses and does well in them. Since he enjoys the abstract and symbolic nature of math concepts, he expected statistics to be an interesting course. The lectures provide a great deal of information on statistical formulas and computations, presented in a very sequential manner. Jim finds this approach to be frustrating. The level of detail and repetition in the lectures seems to obscure the main concepts. He would prefer the challenge of trying to solve problems first before they are presented in their entirety. The teacher leaves little opportunity to discuss any of the interesting applications or possibilities Jim sees in the concepts.

The professor knows Jim is not doing well and expresses her concern by providing more detailed explanations of the content. Although the professor is very thorough, she allows little time for discussions concerning the lesson implications. She wants the students to understand the important details of statistical procedures.

Perception Process

Examples of Classroom Strategies for Students Preferring Intuition

Framework → Provide, or help students develop a framework for comprehending the broad outlines of the subject. Use outlines, case studies, site visits, simulations, and demonstrations to communicate the structure of a subject, to illustrate relationships among key concepts, and to portray the dynamics of settings. These strategies can also include a baseline of facts.

Insight → Anticipate that students preferring Intuition will quickly respond to questions or lesson materials. Provide experiences that challenge students' imagination. For example, strategies to stimulate insight include creative problem solving, open-ended questioning, creative projects and other aesthetic activities, brainstorming, divergent-thinking exercises, and creative writing.

Abstraction → Provide class assignments that stimulate students to explore abstract and symbolic aspects of a subject. Discuss these topics in class. Provide alternative elective assignments so students preferring Intuition can pursue their interests in greater depth. Also, organize discussion groups for these students.

Possibility → Provide opportunities for students to infer relationships and to explore possibilities. Focus assignments and discussions on these qualities. They are integral to strategies such as creative problem solving, creative projects, brainstorming, and creative writing.

Autonomy → Encourage students to develop and express their insights through independent work. At the same time, help them understand and deal with the differences that their insights may generate between themselves and others. Deal with these issues through open class discussions and individual mentoring. Teachers can also help individual students establish boundaries for independent projects in which they can more successfully focus their work.

Complexity → Routine and detailed tasks are an integral part of creative work. The execution of creative insights requires at least a minimum of skill in a particular area. Encourage students to attend to the details necessary for strengthening and clarifying the outcome of their work. For example, if a student's paper contains original ideas, but does not have enough supporting evidence, return the paper with specific suggestions for revision. Help students process these issues through discussions and individual conferences.

Insightful ideas cannot be predicted nor scheduled. Teachers must understand that students preferring Intuition who pursue the stimulation of new ideas often have flexible or unpredictable work habits. This raises questions about self-discipline and class routine. Be flexible regarding work deadlines. Help students understand the not-so-easy relationships between self-discipline and insight. Openly discuss these issues.

← **Adaptability**

An Example of Strategies for Solving the Problems of Opposite Preferences

←

STUDENTS PREFERRING INTUITION NEED	TEACHERS PREFERRING SENSATION WILL
Freedom to respond selectively to ideas in a lesson	Present factual, well-organized lessons
Freedom to have reasonable flexibility in their work	Expect students to be thorough in their work
A framework from which to grasp ideas of a lesson	Value the importance of details to learning
Opportunities to explore possibilities	Focus class discussion on applications

To resolve differences, the teacher preferring Sensation should establish a well-organized framework for class sessions. Focus instruction on structured, factual approaches when necessary and desirable. Within this general context, stimulate the students' intuitive abilities and allow flexibility for pursuing work. Help students preferring the Intuition process understand the important relationships existing between structure and freedom, concept and fact, creative insight and self-discipline, and inspiration and details of execution.

Teaching Strategies for Students Preferring Intuition

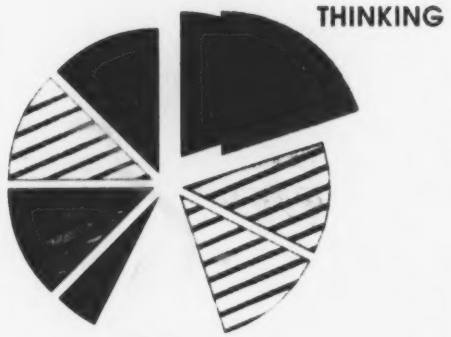
←

LEARNING STRENGTHS	CAUTIONS
Experiments	Demonstrations and lectures: emphasize major points and implications
Research projects	
Open-ended questioning	
Creative problem solving	
Creative projects, esthetic activities	**DEVELOPMENTAL NEEDS**
Divergent thinking	Consensus decision making
Guided fantasy	Patience and thoroughness: help students pay more attention to the details in their work
Brainstorming	
Games, simulations	
Creative writing	Sequential record keeping
Non-directive teaching	Categorizing and grouping
	Planning: developing realistic plans and workable applications

Decision-Making Process Similarities

The Thinking Preference in Learning and Teaching in the Classroom

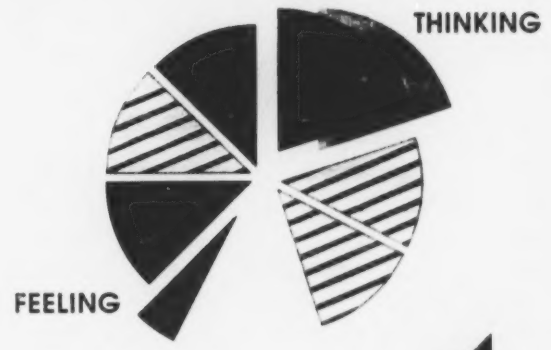
Students preferring **Thinking** may appear cool and detached in their analysis of most situations. They usually have firm convictions, are serious and businesslike, and seem unconcerned how their actions affect the feelings of others.



Students Preferring Thinking		*Teaching for Thinking*
▼ use logic; work best with concepts, constructs, and theories; use facts to illustrate ideas or as evidence for theory	**Logic** ↔	▼ provides opportunities for students to develop analytical skills and to pursue problem-solving and decision-making activities
▼ expect competence of self, teachers, peers; expect the system to be fair; value competition	**Competence** ↔	▼ provides feedback to students; provides criteria for work evaluation
▼ seem outwardly unconcerned; may be uncomfortable when presenting ideas to others; are unskilled in gaining support from others	**Communication** ↔	▼ provides opportunities for students to present ideas to peers
▼ often pursue independent ideas regardless of external influences; may not know how to link valued personal ideas to the real world	**Independence** ↔	▼ helps students identify and pursue independent work
▼ expect assignments and instructions to be logically ordered; expect clear evaluation criteria	**Clear Expectations** ↔	▼ provides logically ordered assignments with clear expectations
▼ must remain true to the principles of serious investigation to remain 'on task'	**Scholarship Achievement** ↔	▼ recognizes students' needs for serious achievement; provides opportunities for students to undertake scholarly work

Decision-Making Process Differences

Different Preferences in the Classroom: Some Issues Between Thinking in Learning and Feeling in Teaching



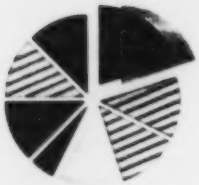
Students Preferring Thinking		*Teachers Preferring Feeling*
▼ focus on achievement, competence, and competition	Competence ← Harmony →	▼ prefer a harmonious, cooperative classroom
▼ approach ideas through logical analysis	Logic ← Values →	▼ tend to use values based, individual approaches to ideas
▼ often associate higher levels of competence and greater accomplishment with individual worthiness	Achievement ← Climate →	▼ emphasize students' inherent worthiness and importance to class regardless of the students' accomplishments
▼ prefer independent work; may think cooperative approaches obscure individual competence	Independence ← Cooperation →	▼ may ask students to cooperate on assignments or activities regardless of intellectual differences

The following scenario illustrates differences in DECISION-MAKING preferences between **Thinking** in learning and **Feeling** in teaching.

Luis's class receives a writing assignment to produce a publishable article that emphasizes reader interest. He writes a paper for class that thoroughly covers his topic. Luis writes it with painstaking accuracy, organizes and clarifies all the information pertinent to the assignment, and discusses the topic in comprehensive detail. He is pleased with the results and feels competent about his work. It does not seem logical nor reasonable to Luis when he receives less than the "A" he anticipates for this assignment.

The teacher appreciates Luis's work. He values his dedication to the task and the commitment in his approach to this assignment. The teacher finds the writing logically structured, carefully illustrated, and indicating an extensive use of information. However, reader interest is an important consideration in this assignment, and Luis's written thoughts are difficult to follow. Also, the teacher finds the writing uninteresting; it seems "dry and boring." He feels it falls far short of the primary requirement for "reader interest." Consequently, he cannot give Luis an "A."

Decision-Making Process



Examples of Classroom Strategies for Students Preferring Thinking

Logic/ Objective → Develop activities and reading assignments that challenge students to exercise their analytical skills. Provide materials that require the use of facts and observations to develop or critically examine concepts and theories. Adapt a variety of strategies to these goals - for example, experiments, research projects, problem solving, games, and simulation activities.

Competence → Respond to the students' need for a sense of competence. Provide clearly defined evaluative criteria so students' work can be assessed by both the teacher and the students. Give feedback, including opportunities for students to share work with their peers.

Communication → Students preferring Thinking often need experience in communicating their work effectively to others. Strategies such as oral reports, presentations, and demonstrations require the preparation of carefully focused material. Discussions provide opportunities for students to respond to peer questions and challenges. **Remember**: these students value competition.

Independence → Provide assignments and readings that allow students to work independently and develop individual projects. Also provide mentoring and serious feedback on their work in progress. Establish clear evaluative criteria for project outcomes. Also encourage students to share their work with the class through oral reports and discussions.

Clear Expectations → Establish a clear rationale for the course structure, assignments, and lectures. Communicate this rationale to students. Provide clearly defined assessment methods and criteria.

Scholarship/ Achievement → Students preferring Thinking value serious involvement with the issues and activities they find interesting. It is important that the students work in a setting that supports their interest level. Encourage students to pursue serious work. **Remember**: competence is important to these students. Serve as a mentor by providing evaluation and feedback for their work.

An Example of Strategies for Solving the Problems of Opposite Preferences

STUDENTS PREFERRING THINKING NEED	TEACHERS PREFERRING FEELING WILL
To achieve; they value competence and competition	Work toward a harmonious cooperative classroom
To employ logical analysis	Base their thinking on values
To see themselves as competent in order to validate their self-worth	Emphasize students' inherent worthiness
Prefer to work independently	Ask students to cooperate on assignments and activities

To resolve differences, the teacher preferring Feeling should recognize that students preferring Thinking are inherently independent and skeptical. This always requires some discussion and compromise from a Feeling perspective. These students readily engage in cooperative activities if they can contribute their logical abilities, and if achievement and competence are goals of the activity. In addition to academic achievements, group participation and leadership, cooperation, and interpersonal skills are also important areas of competence. Present these activities as challenging competencies and thinking students are more likely to respond. As with academic activities, provide feedback and establish the criteria and means by which students can assess their progress.

Teaching Strategies for Students Preferring Thinking

LEARNING STRENGTHS	CAUTIONS
Independent studies	Questioning: should be challenging, investigative
Demonstrations	Games: should be challenging, competitive
Experiments	Field trips: emphasize investigative activities
Problem solving	
Research projects and reports	
Lectures	
Team/group challenges	
Inductive/deductive thinking	
Debates	**DEVELOPMENTAL NEEDS**
Oral reports	Group process experiences
Competency tests	Values clarification
Critical thinking	Consensus decision making
Models, diagrams, charts, tables	Valuing others, showing supportive concern and empathy

Decision-Making Process Similarities

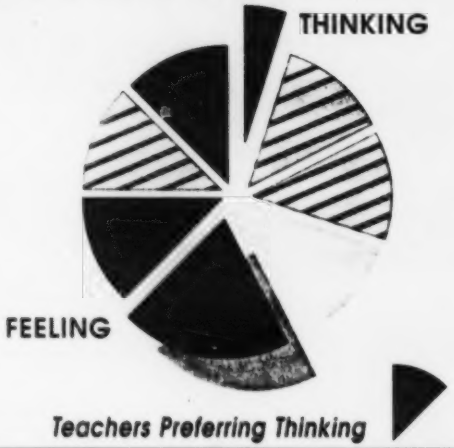
The Feeling Preference in Learning and Teaching in the Classroom

Students preferring **Feeling** are friendly and concerned about people and the things affecting them. They want the class to run smoothly; they are interested in the things they judge to be most important.

Students Preferring Feeling		*Teaching for Feeling*
▼ base their responses on individual values towards subject matter, the teacher, and the setting	**Personal Values** ↔	▼ recognizes that students base learning on their values; relates lessons to value issues
▼ draw conclusions from a values rationale rather than a logical analysis; may have difficulty considering ideas that challenge their values	**Values Rationale** ↔	▼ emphasizes a values rationale; helps students integrate logic and the use of evidence with values considerations
▼ enjoy participating in collegial groups, and working cooperatively with others on assignments, projects, and discussions	**Cooperation** ↔	▼ provides opportunities for students to work in collegial groups and to share independent as well as group experiences
▼ respond to what they perceive as the inherent values in situations; may show emotion easily and act impulsively	**Climate** ↔	▼ establishes cooperative classroom climate; emphasizes students' inherent worthiness
▼ prefer harmonious relationships with others; tend to avoid competition and confrontation; may reject disturbing, disagreeable topics or situations	**Harmony** ↔	▼ fosters positive interpersonal communications; helps students deal with stress
▼ prefer subjects related to issues and concerns for people; enjoy group projects that allow interaction with peers	**Human Orientation** ↔	▼ considers individual and societal issues in assignments and discussions

Decision-Making Process Differences

Different Preferences in the Classroom: Some Issues Between Feeling in Learning and Thinking in Teaching



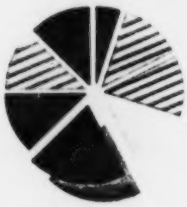
Students Preferring Feeling		*Teachers Preferring Thinking*
▼ connect lesson information to their personal values or issues	Personal Values ← Objectivity →	▼ present objective information, may overlook student concerns
▼ prefer teachers who express their concern for others and who include the human aspects of a subject in their teaching	Human Orientation ← Logic →	▼ emphasize a logical approach; relate facts to concepts and theories
▼ prefer learning in cooperative groups to clarify beliefs and process information	Cooperation ← Competence →	▼ require students to demonstrate individual competency through competition and achievement
▼ appreciate harmony in the classroom, praise for their efforts, and personal encouragement	Harmony ← Competition →	▼ are less personal; place emphasis on course requirements; reward academic achievement

The following scenario illustrates differences in DECISION MAKING between **Feeling** in learning and **Thinking** in teaching.

Korey, a high school freshman, is looking forward to her geography class. In social studies she enjoys discussions about different parts of the country and the places she has traveled on vacation. She likes the scenery, customs of the people, and talking with her parents about how places were settled. Korey also enjoys reading about the experiences of families moving across the country to find new homes. She likes to relate these experiences to stories about her ancestors who established their homes many years ago.

The teacher is very concerned that the students do not know much about geography. She presents the concepts of continents, nations, regions, states, comparative regional surface features, natural resources, and effects of climate. The lessons are well prepared and carefully illustrated to demonstrate her ideas. However, when presented in this manner, much of the information is not interesting to Korey. Something important seems to be missing, and sometimes she does not see the relationship between the topics and her experiences. The content may seem difficult and sometimes it may not be easy to follow the teacher's rationale. Korey is bored; she does not like geography taught in this manner.

Decision-Making Process



Examples of Classroom Strategies for Students Preferring Feeling

Personal Values → Recognize the importance of the students' own values as they approach learning. Use role plays, reflective journals, values clarification activities, and group discussions to help students determine and express values. Respond individually to students' expressed concerns and help students relate these concerns to class activities.

Values Rationale → Develop activities and reading assignments that allow students to exercise their value orientations in examining issues and developing conceptual positions. Provide assignments that help students develop skills in using evidence and logic as additional ways of grounding values positions. Give students practice in responding thoughtfully to ideas that clash with their values.

Cooperation → Students preferring Feeling appreciate learning activities that involve communicating and cooperating with other students. A wide range of collective strategies can be used effectively with these students - for example, small group projects, group discussions, team projects, role plays, interviews, and group games. Establish clear goals, feedback methods, and outcome evaluations for these activities.

Climate → Students preferring Feeling may attribute inherent values to situations they experience or learn about; sometimes they are emotional about these experiences. Create a classroom climate that is cooperative and communicative. Establish class policies regarding behavior and provide appropriate praise and appreciation for students' efforts. Exercises in interpersonal communication can help students develop skills for group work.

Harmony → Introduce classroom materials that illustrate ways of understanding opposition, competition, and conflict. Teach students methods for arbitrating stressful issues or dealing with stressful aspects of lessons. Establish controls for confrontation or conflict.

Human Orientation → Include discussions of the implications of the lesson content and activities for human affairs. Use various techniques for this purpose - for example, role plays, small group and class discussions, creative writing, reflective journals, and field trips. Help students tie the general discussion of human affairs to their personal experiences.

An Example of Strategies for Solving the Problems of Opposite Preferences

STUDENTS PREFERRING FEELING NEED	TEACHERS PREFERRING THINKING WILL
To convert lesson information into personal values	Present objective information in lessons
To have instruction related to "people" dynamics	Emphasize logical approaches
To work in cooperative groups	Emphasize individual competence
Personal encouragement	Reward academic achievement

To resolve differences, incorporate value considerations, a human orientation, and cooperative learning strategies within a logical and scholarly context emphasizing competence. Include in the instruction any issues raised by students' values and human concerns. Examine these issues logically from a base of evidence, as well as from value principles. For example, environmental issues can be examined from both value bases and from scientific evidence.

Teaching Strategies for Students Preferring Feeling

LEARNING STRENGTHS

- Group discussions
- Field trips
- Role plays
- Small group activities and cooperative projects
- Interviews
- Oral reports
- Creative projects and aesthetic activities
- Essays
- Peer tutoring
- Creative writing
- Interpersonal communication exercises
- Games
- Reflective journals
- Group processing and consensus

CAUTIONS

- Lecture/discussions: include humanistic emphasis and value issues in the material
- Practice: useful when the goals are understood and valued

DEVELOPMENTAL NEEDS

- Conflict resolution
- Analytical skills
- Logical organization of material
- Selective, effective use of information
- Long-term perspective

Adaptation Process Similarities

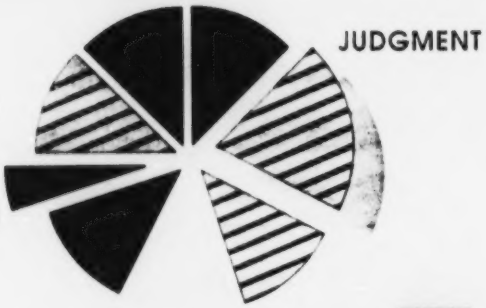
The Judgment Preference in Learning and Teaching in the Classroom

Students preferring **Judgment** organize their work. They want structured assignments and clear performance criteria; they are uncomfortable with unanticipated changes.

Students Preferring Judgment		*Teaching for Judgment*
▼ value closure; prefer to make decisions and get things moving	**Closure** ↔	▼ provides structure students can work within, but also helps students learn when to withhold judgment and avoid premature closure
▼ plan their activities; want to know what is expected	**Planning** ↔	▼ encourages students to pursue independent plans which they develop from specific expectations
▼ prefer structured assignments with concise instructions and clear expectations	**Structure** ↔	▼ provides a well-organized curriculum with structured assignments and clear performance criteria
▼ hold beliefs and principles on which they base their decisions	**Criteria** ↔	▼ challenges students to consider and apply different standards of judgment
▼ want to know standards of accountability in advance	**Accountability** ↔	▼ provides stages of progress for work on lessons, projects, and activities; provides clear evaluation criteria and feedback
▼ appreciate being recognized for their accomplishments	**Recognition** ↔	▼ recognizes students' work
▼ show leadership abilities; are decisive; make decisions quickly but may restrict options	**Decisiveness** ↔	▼ provides leadership opportunities, but challenges students to search for new perspectives and more information before making decisions

Adaptation Process Differences

Different Preferences in the Classroom: Some Issues Between Judgment in Learning and Perception in Teaching



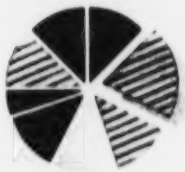
Students Preferring Judgment		*Teachers Preferring Perception*
▼ prefer assignments with clear instructions and well-defined student outcomes	**Structure** ← **Novelty** →	▼ often give open-ended assignments to stimulate divergent thinking
▼ prefer well-planned activities with regular, dependable schedules; complete assignments on time - sometimes early	**Planning** ← **Spontaneity** →	▼ may alter instructions or change assignments to increase the richness of learning experiences or to respond to changing student needs
▼ expect teachers to have clearly defined grading criteria	**Accountability** ← **Openness** →	▼ prefer an open-ended approach to assessment to account for diversity in student responses
▼ expect teachers or groups to make decisions quickly	**Decisiveness** ← **Flexibility** →	▼ may include students in decision making to insure flexibility in meeting student needs

The following scenario illustrates the differences in ADAPTATION between Judgment in learning and **Perception** in teaching.

Bill always finishes his work on time. He enjoys planning his work as long as the teachers are very clear in their expectations. He always tries to do just what the assignment requires. After he begins his work, he does not want to change his plan. If he must change, he requires more time. He has a difficult time with teachers who give unclear assignments or suggest changes or alternatives after giving the assignment. Bill frequently finishes before many others in the class, but he tends to overlook new information that could contribute to his work.

Bill has difficulty with one teacher who is very flexible and open-minded, but never seems organized. The teacher suggests new aspects or alternative approaches to the assignment after Bill begins working. This teacher believes that giving more options better informs the class; consequently, their work improves. Bill is frequently perplexed by what he perceives as the teacher's unorganized, unanticipated "extras." The teacher explains to Bill that he may overlook useful information if he finishes assignments too quickly.

Adaptation Process



Examples of Classroom Strategies for Students Preferring Judgment

Closure → Provide structure for students' work, but explain that finishing assignments too soon may exclude important additional perspectives or information from their work.

Planning → Students preferring Judgment tend to plan their activities carefully. They expect teachers to provide well-planned instruction. Therefore, encourage students to plan their daily work. Stimulate their planning ability through independent projects and group leadership roles. At the same time, help them understand the differences between themselves and other students who are less skillful at planning. Assist them in dealing with ambiguity and incorporating flexibility in their plans.

Structure → Provide clear instruction for all assignments. State course, class, and project schedules. If flexibility in scheduling is necessary, clarify this at the beginning of the course. Keep students informed if changes occur and give the reasons for these changes.

Criteria → Provide clear criteria for assessing students' work for grading purposes. However, help students expand their decision making by illustrating the impact of different criteria. Involve students in assessment activities that compare the outcomes of different judgment standards. Introduce different perspectives by asking students to develop assessment criteria for some assignments.

Accountability → Provide clear expectations for assignments, projects, and activities. Specify assessment criteria for these expectations. Also provide guidelines for each stage of the assignments. Offer feedback on assignments in progress and provide specific evaluative comments on final work. Make suggestions for improvement.

Recognition → Provide critical feedback as students' work progresses; recognize specific work that is well done. Students differ in what they see as valid recognition. Some students value a sincere acknowledgment by the teacher or respected peer; others appreciate opportunities to share work with their peers; and some value awards and certificates.

Decisiveness → Anticipate that students will promptly pursue their work. Be certain they do not make project decisions too quickly or complete assignments too early. Be prepared to suggest useful ways of incorporating additional information and perspectives into student assignments.

An Example of Strategies for Solving the Problems of Opposite Preferences

STUDENTS PREFERRING JUDGMENT NEED	TEACHERS PREFERRING PERCEPTION WILL
Well-organized, clearly defined assignments	Give open-ended assignments
Planned activities, dependable schedules	Alter assignments or instruction as necessary
Clearly defined evaluation criteria	Have an open-ended approach to evaluation
To make decisions quickly	Involve students in decision making

In order to resolve differences, the teacher preferring Perception can pursue open-ended instructional strategies that provide additional structure when necessary. Open-ended assignments can include structured alternatives; flexible schedules can include well-planned units. Assessment should include alternative procedures based on differences in students' learning preferences. Alternatives should provide all students with the opportunities to function at their best.

Teaching Strategies for Students Preferring Judgment

LEARNING STRENGTHS

- Research projects
- Well-planned lectures, assignments and activities with clear expectations
- Well-defined assessment criteria
- Debates
- Mastery learning
- Outlines, handouts
- Independent projects

CAUTIONS

- Experiments: provide relevant structure and directions
- Questioning: pose questions that lead students beyond obvious answers
- Problem solving: help students avoid hasty conclusions

DEVELOPMENTAL NEEDS

- Consensus decision making
- Values clarification
- Suspension of judgment; avoidance of premature closure
- Valuing of spontaneity

Adaptation Process Similarities

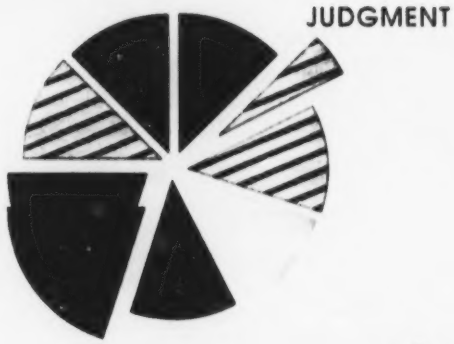
The Perception Preference in Learning and Teaching in the Classroom

Students preferring **Perception** have flexible work habits. They look forward to new experiences and appreciate spontaneity and novelty.

Students Preferring Perception		*Teaching for Perception*
▼ are captivated by the richness of their perceptions; are constantly enlivened by surrounding activities; are guided by the intensity of their experiences	**Spontaneity** ↔	▼ values students' divergent thought processes; seeks to provide a rich learning environment for spontaneous discovery
▼ seek accumulation of experiences; are enthusiastic for things as they happen; may have unpredictable responses	**Novelty** ↔	▼ allows students to pursue varied experiences; helps students focus their interests
▼ are attracted to happenings; often respond to the immediate impact of perceptions; may be less interested in long-term meanings	**Openness** ↔	▼ provides divergent learning activities; helps students develop ways of evaluating their perceptions and experiences
▼ prefer active processes; tend to dislike imposed structure, routine, organization, and decision making	**Flexibility** ↔	▼ allows students to work with flexibility; helps students learn the practical value of closure and decision making
▼ often feel they do not have enough information to complete an assignment; may continue to search for new information; may have difficulty finishing their work	**Development** ↔	▼ sets assignment deadlines so students have time to pursue different sources and to entertain changes in perspective
▼ may underestimate the time needed to complete assignments; may have uncompleted assignments when deadlines arrive	**Management** ↔	▼ helps students organize work in shorter time segments; arranges contracts for work units to be finished

Adaptation Process Differences

Different Preferences in the Classroom: Some Issues Between Perception in Learning and Judgment in Teaching



Students Preferring Perception		*Teachers Preferring Judgment*
▼ prefer spontaneous activities and the freedom to explore ideas	Spontaneity ← Control →	▼ are organized and in control of classroom action
▼ benefit from flexibility and unanticipated events	Flexibility ← Planning →	▼ adhere to planned agendas
▼ are open to new information; tend to have difficulty making decisions and finishing work on time	Novelty ← Structure →	▼ expect students to complete work as assigned
▼ are open to experience; may have unusual ways of approaching tasks or unique perspectives on a topic	Openness ← Accountability →	▼ expect students to use rational thought processes and decision making as they respond to instruction

The following scenario illustrates differences of Adaptation between **Perception** for learning and **Judgment** for teaching.

Dave enjoys many activities, interests, and hobbies. He is spontaneous and appreciates unplanned events. Although he enjoys his school work, he often makes more commitments than he can manage. Dave often has difficulty making decisions or meeting deadlines. He is never quite certain when he has enough information for an assignment. Sometimes he does not know how to organize the information he has. Dave sometimes loses interest after beginning an assignment; his work is often late or unfinished.

Dave's teacher is very well organized and has every aspect of the course planned from the beginning of the term. The teacher expects students to choose term projects early and begin them within a few weeks. He is frustrated because Dave seems to disregard the plans and routines developed to help students make reasonable progress through the assignment. The teacher knows that students can be successful when they organize their work and follow through with their plans.

Adaptation Process

Examples of Classroom Strategies for Students Preferring Perception

Spontaneity → Provide students with a rich fabric of activities and material. Give students time and class arrangements to pursue additional experiences. Use the inherent spontaneity of these students to provide a richer environment for all students.

Novelty → Incorporate novel material and divergent approaches into classroom activities and assignments. Process each experience with the class to clarify its meaning and utility. Help students focus their interests and use their spontaneous responses to enrich papers, reports, and projects.

Openness → Understand that students may pursue experiences and accept outcomes without considering the long-term implications. Use activities and readings that help students recognize the potential shortcomings as well as the significant values in their immediate experiences.

Flexibility → Provide diverse assignment strategies that allow flexible as well as structured approaches to class work. Encourage divergent, creative responses from students. Help students assess these responses and find ways to integrate their meanings in classroom work and individual projects.

Development → Students preferring Perception often feel there is more information "over the next hill" that will be important to their assignment. Sometimes they have more information than they can organize. Therefore, they have difficulty finishing their work. Give students time to pursue different sources and to develop changes in perspective. Draw upon the talents of these students to expand the resources accessible to the rest of the class. Help these students develop criteria for including and excluding material from their sources; help them develop methods for organizing their most important information. Have students write down and review the outcomes of their planning. One-on-one or small group discussions may be helpful with students who are more decisive about organizing information and reaching closure.

Management → Recognize that students will have some difficulty making decisions and establishing work patterns. Develop activities and strategies to assist them in setting reasonable goals and deadlines. Help these students plan backward from their deadlines to determine the time needed to meet their goals. Ask students to write out this schedule.

An Example of Strategies for Solving the Problems of Opposite Preferences

STUDENTS PREFERRING PERCEPTION NEED	TEACHERS PREFERRING JUDGMENT WILL
Freedom to follow spontaneous ideas	Control classroom action
Flexibility to pursue alternative activities	Adhere to planned agendas
To react to happenings around them	Expect students to follow established processes to complete assignments
To pursue unique perspectives of a topic	Expect students to use rational thought processes

To resolve these differences, the teacher preferring Judgment should allow alternative assignments and activities that permit flexible arrangements, reasonable spontaneity, and novelty. However, these activities should still be part of an overall structured class format. Process these experiences and help students understand their value and applicability.

Teaching Strategies for Students Preferring Perception

LEARNING STRENGTHS	CAUTIONS
Role plays	Practice short, focused activities with specific goals
Games	Lecture/discussion: provide variety and opportunities for active movement during lectures and discussions
Field trips	
Unstructured time for class work and activities	
Creative activities	
Flexible assignments, alternative exercises, readings, papers, projects	
Incorporating the unexpected into class activities	
Divergent thinking	

DEVELOPMENTAL NEEDS
Convergent thinking tasks
Decision-making exercises
Time management for assignments
Planning skills
Experiences that focus attention
Contracts for completing assignments

Teacher Notes

Using the Individual Learning Preferences Checklist

The **Individual Learning Preferences (ILP) Checklist** helps teachers and students identify learning preferences. The questions are based on Carl Jung's descriptions of psychological type. Answers to the questions indicate those preferences which are learning strengths and those preferences of which the student is uncertain. The answers enable teachers to identify strategies that help students learn more effectively.

← **Purpose of the Checklist**

A preliminary validation of the ILP Checklist has been completed using 112 subjects enrolled in college classes in a private liberal arts school and in a major state university; 112 students completed the ILP Checklist, and 97 completed both the ILP Checklist and the Myers-Briggs Type Indicator (MBTI)®. The MBTI® is the major instrument for assessing the psychological type characteristics which are the basis of the ILP Checklist. Reliability coefficients on the ILP Checklist range from 0.87 to 0.99. Correlations between parallel scales of the Myers-Briggs Type Indicator and the ILP Checklist range from 0.88 to 0.99. These preliminary results indicate that the ILP Checklist is reliable and highly consistent with the MBTI® in measuring learning preference characteristics. Teachers can use the ILP Checklist with confidence, but it is important to follow the interpretive instructions included in this publication.*

← **Validation of the Checklist**

The **Individual Learning Preferences Checklist** can be used to identify learning preferences. It is short (56 items), has a simple checklist response format, and is self-scoring. The ILP Checklist can be completed and scored in approximately 8 to 10 minutes. There are eight sets of questions, one for each of the Learning Preferences:

← **Description of the Checklist**

PROCESSES	PREFERENCES
Orientation	Extraversion, Introversion
Perception	Sensation, Intuition
Decision Making	Thinking, Feeling
Adaptation	Judgment, Perception

Each set of questions contains seven items. A student receives one point for each checked item. The total number of points that can be scored for each preference is seven (7); the minimum number is zero (0). The scores are listed in the following sets (see third page of ILP Checklist):

← **Checklist Scores**

I. Extraversion	III. Sensation	V. Thinking	VII. Judgment
II. Introversion	IV. Intuition	VI. Feeling	VIII. Perception

* For the statistical analysis, tied scores were resolved using the procedure described by Myers and McCauley in *Manual: A Guide to Development of the Myers-Briggs Type Indicator*, p. 9. Palo Alto, CA: Consulting Psychologists Press, 1985.

Scores *(continued)* →

Most individuals will have a higher score in one preference within a set - for example, the Extraversion score will be higher than the Introversion score or vice versa. After validation with students, the preference with the highest score within a set becomes a Learning Preference identified by that student. Occasionally students have scores that are tied within a set. In this case, preferences are considered to be uncertain. The procedure for clarifying uncertain preferences is discussed below.

Validating Preferences with Students →

Caution: Psychological characteristics are very difficult to assess. Any set of questions intended to assess learning preferences exhibits some error. Therefore, it is appropriate to use the Checklist scores as an **estimate** of a student's learning preferences. **DO NOT** use the Checklist scores as final indicators of preferences. Use this "estimate" of student preferences as follows:

1. The teacher should share with students the descriptions that match their preferences.
2. Students must consider whether these are accurate descriptions of how they learn. They must be free to make the final decisions concerning accuracy.
3. Students may be uncertain about some of their learning preferences. Some scores on the Checklist may not show a clear preference, or a student may disagree with the results of the Checklist. In either of these cases, students can further explore their preferences in the following ways:
   a. They can ask themselves questions based on the preference descriptions. For example, do I really enjoy working with others (Extraversion) or do I prefer to work alone (Introversion)? Do I have a hunch about an answer (Intuition), or do I have to consider more carefully the various aspects of a question (Sensation)? Do I like flexibility in school work (Perception), or do I prefer a clear schedule (Judgment)?
   b. Students can observe themselves over time and consider these and other questions as they progress.
   c. Teachers can help by observing how students learn best; however, it is important that teachers not impose their interpretations on students.

What Is a Single Learning Preference Score Telling You?

Interpreting Single Learning Preferences →

A single learning preference score - when it is the highest in its set and validated with the student - identifies one of the preferences by which that student learns best. Consider this learning preference when planning instruction for that student. For example, if Extraversion is an identified learning preference, we can reasonably assume that this student prefers learning activities, enjoys working with others in groups, and adapts easily to classroom activities.

If the identified learning preference is Sensation, then it is probable that the student pays attention to what is seen as real in experience; wants to see concepts supported by facts; and prefers a well-ordered, sequential presentation of course content. If the identified learning preference is Thinking, the student probably considers competency development to be of primary importance and prefers to work on independent projects. If Perception is the identified learning preference, the student probably prefers a flexible schedule, devotes a substantial amount of time to gathering information for an assignment, and values spontaneous happenings in or out of class.

From this discussion it is obvious that if even **one** learning preference is clear, it makes a difference in the student's learning. Therefore, if the student is to maximize learning, the teacher must address this learning preference.

Interpretation of Multiple Learning Preferences

← **Interpreting Multiple Learning Preferences**

Most students have clear scores for more than one learning preference. The most simple and effective way to interpret the combined effect of multiple learning preference scores is to consult the **Learning Preference Descriptions** for each identified learning preference. Then combine these descriptions in a statement that most fits that student. For example, if Extraversion and Intuition are two identified learning preferences, the student is an active learner who prefers to deal with the breadth of a topic, and enjoys working with others (Extraversion). This student is also fascinated by the possibilities perceived in course content, often responds with insight, and tends to see the complexity in a set of ideas (Intuition). These two qualities together paint a more complete picture of a student who learns through active involvement and who responds to a wide range of ideas – often with insight. With this knowledge, the teacher can provide some assignments or alternative class activities that involve active learning and value a divergent approach.

← **Two Preferences**

Now, assume that Sensation and Thinking are the identified preferences. This student focuses on what is real and what works, learns best through a sequential approach, and looks for facts and exact meanings of ideas (Sensation). Also, this student uses logic in processing ideas and facts, prefers to work independently, and values individual competence (Thinking). These two preferences together suggest a student who learns best through a logical, sequential approach; focuses on applied problems; and challenges propositions not well defined nor factually grounded.

Next, assume that three learning preferences are clearly identified: Introversion, Intuition, and Feeling. Introversion suggests that the student approaches assignments introspectively, deals with topics in greater depth, and prefers to work quietly and independently. Intuition suggests that the student is interested in the symbolic meanings and possibilities found in ideas, tends to generate insightful and original

← **Three Preferences**

approaches to an assignment, and perceives complexity in a set of concepts. Feeling suggests that the student approaches assignments from a values position and with a view of human outcomes, appreciates collegial and harmonious relations in a class, and enjoys working in groups. Three identified preferences provide a more complete view of a student. In this case we have an image of a student who works quietly and introspectively, who often develops original approaches, and for whom individual values play a significant role in learning.

Four Preferences →

Adding Judgment or Perception to the previous example results in the representation of all four processes. If Judgment is clearly identified, the student probably exhibits the qualities described previously, but also prefers structure when completing assignments and meeting deadlines, and appreciates carefully planned activities with clear evaluation criteria. If Perception is clearly identified, the student probably exhibits the qualities previously described, but also is less structured when approaching assignments and deadlines, responds to unusual and unpredictable aspects of a lesson, and is skillful at finding new information sources for a project.

Value of Understanding Class Learning Preferences →

The examples of multiple preferences previously presented demonstrate the value of increasing knowledge of student learning preferences. Obviously, with twenty or more students in a class, the teacher cannot address all aspects of each student's learning preferences in every teaching activity. However, by knowing preferences for an entire class, the teacher can use strategies that address at least one key preference for each student. Individual and small group work offer further opportunities to address additional student preferences. General approaches to the development of teaching strategies that address student differences are discussed and illustrated on pages 7 to 11 in **How to Use This Handbook**.

Learning Preference Combinations →

When fully conceptualized, the eight learning preferences result in sixteen combinations. Each of these contains one preference from each of the four processes as illustrated in Appendix D (see page 67). Simplified summative descriptions of learning preferences are found in Appendix D and based on the four preferences in each combination. These descriptions apply to individuals having four clearly developed preferences. The sixteen combinations illustrate the full range of learning preferences that can exist in a group. They are useful as a reference when discussing learning differences with individual students or a class.

The ILP Checklist →

The next section contains the **Individual Learning Preferences Checklist**.

Name _____

The Individual Learning Preference Checklist

Many of the following statements are common to almost everyone to a certain extent – many of them will apply to you. Place a check mark beside those statements that **most accurately describe you**. There are no wrong answers. The items you choose will help to indicate your learning preferences.

01.	____	I am naturally outgoing and interested in what others are doing.
02.	____	Talking to my classmates in class helps me think about the lesson.
03.	____	Many things around me attract my attention.
04.	____	I tend to be impatient with deep and profound ideas.
05.	____	It does not bother me to be interrupted.
06.	____	I prefer to be active in several groups or organizations at once.
07.	____	I prefer to be involved in action projects in classes and organizations.

08.	____	People say I am hard to get to know.
09.	____	I prefer to think things over by myself before discussing them with others.
10.	____	I like to work in a quiet place.
11.	____	I prefer having a few, very close friends.
12.	____	I may not think of answers to some questions until the next day.
13.	____	I consider something a long time before taking action on it.
14.	____	I want to be in control of what I am doing.

15.	____	I want to have practical applications for my school work.
16.	____	I think the facts of a lesson are the most important.
17.	____	I enjoy using the skills that I have learned.
18.	____	I prefer assignments that tell me exactly what to do
19.	____	I am interested in learning how things work.
20.	____	Teachers should give specific directions to study for tests.
21.	____	The order of details is important in learning new information.

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22. ____ I often get interesting, new ideas.

23. ____ The meanings behind the facts interest me.

24. ____ I like solving unusual problems.

25. ____ I get impatient when working with details.

26. ____ It is easy for me to see the relationship of one idea to another.

27. ____ I am not certain how a project might work out when I start on it.

28. ____ I look for the pattern of an idea when I work on it.

29. ____ I solve problems using a logical approach.

30. ____ I prefer to analyze facts before accepting them as evidence of a concept or theory.

31. ____ I expect my teachers to be competent.

32. ____ I believe knowledge is most important for achieving success.

33. ____ I want the standards for grades in my classes to be fair and impartial.

34. ____ I believe it is often important to challenge and criticize ideas.

35. ____ I determine what is expected of me before I need to do it.

36. ____ I am usually aware of how others around me feel.

37. ____ I am most interested in things that I value.

38. ____ I like it when people cooperate to get things done.

39. ____ I appreciate it when a teacher praises what I do.

40. ____ I am interested in courses about people and things affecting them.

41. ____ My papers and notebooks always seem to be disorganized.

42. ____ I am more comfortable with teachers who let students show their emotions about things that happen.

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43.	____	It is important for me to plan in advance what I will do.
44.	____	I plan to finish one project before I begin working on another one.
45.	____	It is easy for me to make decisions when I have the information.
46.	____	I like to have teachers take an organized approach in classes.
47.	____	I like to have the deadlines for my assignments clearly indicated.
48.	____	I feel more in control of events when I know what to expect.
49.	____	I try to have a well-established routine to get all my work completed.

50.	____	I am always flexible about my activities.
51.	____	It takes me a long time to make decisions.
52.	____	I may have many ongoing projects.
53.	____	I enjoy new activities and new information.
54.	____	It is difficult to know how much time an assignment will take.
55.	____	I am always curious and I keep my mind open for additional developments.
56.	____	I don't mind when unpredictable and spontaneous things happen.

After completing this checklist, please total your responses in each group of items. Then record the numbers in the corresponding spaces below:

ORIENTATION	PERCEPTION	DECISION MAKING	ADAPTATION
I. Extraversion ____	III. Sensation ____	V. Thinking ____	VII. Judgment ____
II. Introversion ____	IV. Intuition ____	VI. Feeling ____	VIII. Perception ____

What Do My Checklist Scores Mean?

There are two scores in each set of scores you have recorded above. The higher of these scores indicates a learning preference. This preference represents a learning process that you tend to use more often. The lower score in the set indicates that you also use that preference, but less often. If you find tied scores within a set, that preference is considered uncertain. Your teacher has a procedure that can help you clarify uncertain preferences. Each successive set of scores identifies a different learning preference, providing you with a more complete picture of how you learn. **Remember**: each preference or combination of preferences is equally valuable; none is superior nor more desirable. **Caution**: the Checklist gives you only an indication of your learning preferences. Your preference selections must be verified from your experience – your teacher has a procedure that can help you interpret and verify the preferences you identify through the Checklist.

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Teacher Notes

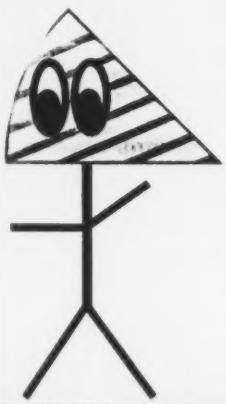
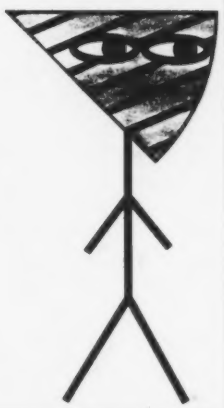
Name _____

APPENDIX A

Student Learning Preferences Worksheet - Part 1

The Individual Learning Preferences Checklist

From the Checklist, copy the high score from each set of learning preferences onto the appropriate line on these two pages. Read the Checklist questions again. Circle the numbers of those items that most accurately describe how you learn. Copy these items into the appropriate spaces on these pages.

❑ I. Extraversion 	ORIENTATION	❑ II. Introversion 
❑ III. Sensation	PERCEPTION	❑ IV. Intuition

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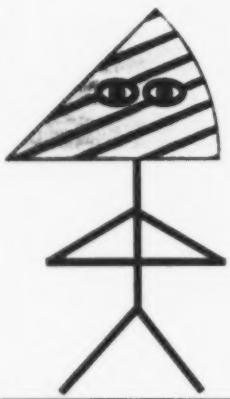
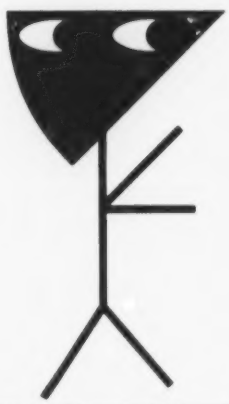
Student Learning Preferences Worksheet - Part 2

Individual Learning Preferences Checklist

❑ V. Thinking	DECISION MAKING	❑ VI. Feeling
❑ VII. Judgment 	ADAPTATION	❑ VIII. Perception 

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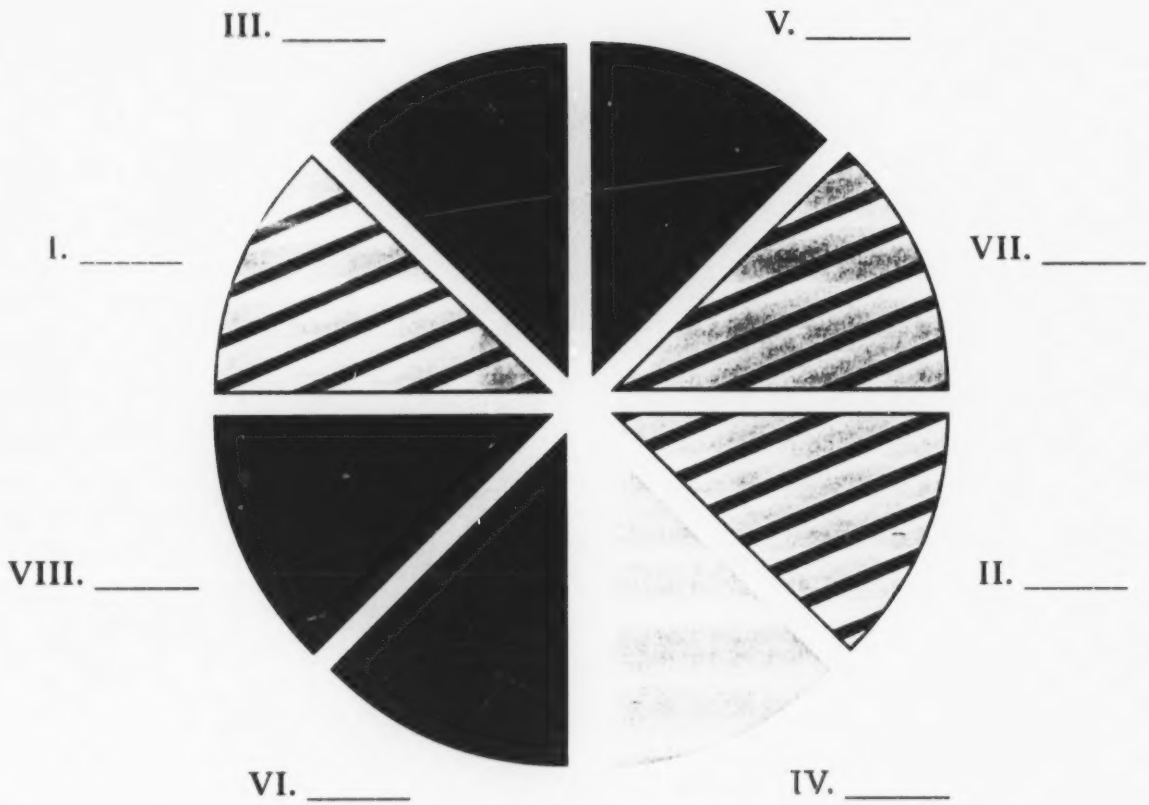
APPENDIX B

Class Learning Preference Distribution



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Directions for Class Learning Preference Distribution

ORIENTATION		I. Extraversion (1 - 7)		II. Introversion (8 - 14)
PERCEPTION		**III. Sensation** (15 - 21)		IV. Intuition (22 - 28)
DECISION-MAKING		**V. Thinking** (29 - 35)		**VI. Feeling** (36 - 42)
ADAPTATION		VII. Judgment (43 - 49)		**VIII. Perception** (50 - 56)

To determine the number of learning preferences selected by class members, total the items in each category that were selected by all the students. Place this total on the line corresponding to the preference wedge. The total number of choices per preference indicates the variety and distribution of learning preferences among class members. The numbers in parentheses (middle of the page) indicate the questions that relate to each learning preference.

This chart is helpful in leading class discussions about learning preference characteristics and the effects produced by learning preference differences among class members. It is important to develop teaching tools to respond to all the learning preferences indicated.

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APPENDIX C

Summary of Learning Processes and Preferences with Examples of Implications for Learning

The learning processes and learning preferences discussed in *Discovering Learning Preferences and Learning Differences in the Classroom* are based on the theory of psychological types developed by Carl Jung. The typological characteristics defined by Jung have shown through research to be significantly related to learning. These characteristics are the basis of the Learning Preference concepts presented in this handbook.

← **Learning Preferences Related to Psychological Type Characteristics**

Teachers and students have a vital interest in understanding the nature of individual learning preferences. These well-developed preferences are the basis of our learning strengths; they represent the learning preferences in which we are most experienced and which we employ most often. A knowledge of these preferences can help teachers develop effective instruction for individual students and classes. Other preferences are less developed; we are less experienced and have less confidence in the use of these preferences. Knowledge of these less-developed preferences is equally important. They represent growth areas for both students and teachers.

← **Knowledge of Learning Preferences Vital to Teachers**

The Circle of Color in figure 4 contains eight wedges representing the full complement of learning preferences discussed in this handbook. These preferences are organized into contrasting sets within each of four processes: Orientation, Perception, Decision Making, and Adaptation. For example, Extraversion (I) and Introversion (II) are contrasting Orientation preferences. The circle implies that all preferences are present in each of us, although some are more developed than others. The circle also implies that these preferences have the potential for integrated development. The characteristics of each set of learning preferences are reviewed briefly in the following text:

← **Graphic Representation of Processes and Preferences**

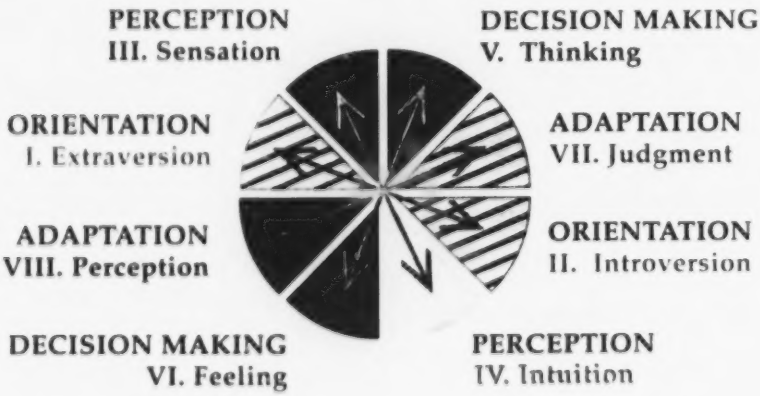

Figure 4. Circle of Color

Orientation Process →

Most individuals have a primary ORIENTATION either to the events, objects, and persons of the outer world surrounding them (Extraversion); OR to the thoughts, values, and images populating their inner world of consciousness (Introversion).

Extraversion →

Individuals who exhibit an Extraverted Orientation are easily involved in and motivated by the events that surround them. Their thought processes tend to begin and continue in interaction with their observations of outer events. They often develop their thoughts by "thinking out loud"; they are vocal and active – sometimes without introspection. These individuals are very outgoing and personable, usually have many friends, and prefer doing things with other people.

Introversion →

Individuals who exhibit an Introverted Orientation are easily interested in and motivated by their inner values and thoughts. Although they interact with people and events around them, their thought processes tend to begin with their own views and priorities. The organization of their thoughts and clarification of their perspectives is very important to them. They tend to be quiet observers who often prefer independent work over working with others in groups. These individuals refuse to express opinions until they have carefully considered their own views.

Significance of Psychological Contrasts for Individual Behavior →

This brief discussion makes several important points. First, these characteristics represent contrasting ways of doing things – a psychological polarity. That is, if one orientation is clearly developed, the contrasting one is not. A person consciously skilled in one orientation is much less skilled in the other. Similarly, a person who feels comfortable with one orientation tends to feel awkward and uncertain with the other orientation. When strong differences, such as these, exist between student and teacher or among students, communication in the classroom can become difficult.

Significance of Contrasts for Learning →

Second, these psychological and behavioral differences have substantial implications for learning – for example:

- One student responds easily in class; another seldom responds.
- One student enjoys working in groups; another prefers working alone in the library.
- One student thinks other people's opinions are very important; another thinks these opinions are superficial.

One of the two modes of PERCEPTION can be observed in most individuals. For example, some persons pay primary attention to the sensory and concrete or factual aspects of their experiences (Sensation). Others pay more attention to the implications and future possibilities in their experiences (Intuition).

← **Perception Process**

Individuals with a **Sensation** preference for Perception are excellent observers. They enjoy the sensory qualities of their experiences and tend to respond to what is "real" to them – that is, what they see, hear, and touch. They pay close attention to the facts as they observe them, but pay less attention to the broader patterns or implicit meanings of their experiences. Since contact with the outside world is important to them, they appreciate and enjoy hands-on experiences. These individuals enjoy using their mastered skills and work hard to improve them.

← **Sensation**

Individuals with an Intuitive preference for Perception are strongly attracted to the broader patterns and symbolic meanings perceived in what they see, hear, and touch. They are less observant of the concrete or factual aspects of their experiences. These individuals respond to the possibilities they see in events, ideas, and people. They are often imaginative in the approaches they take and tend to become bored with repetition. New ideas and approaches intrigue them and they enjoy the challenge of problem solving.

← Intuition

Again, we see a strong contrast between these processes:

← **Significance of Contrasts**

- One student pays close attention to the specifics of a lesson; another easily grasps the overall patterns of the lesson, but may overlook important facts.
- One student looks for clear sequential instructions; another appreciates the freedom to move in self-initiated directions.
- One student deals step-by step with the complexity of the task or question at hand; another responds to clues suggesting an approach to the task or an answer to the question.

Decision Making → Many individuals make decisions by logically analyzing information and drawing conclusions (Thinking). Other individuals make decisions based on the values they view as important to that decision (Feeling).

Thinking →

Individuals who use **Thinking** as a Decision-Making mode pay attention to information important to a decision. They carefully analyze that information to identify implications and arrive at a final decision. These individuals may or may not see values as an important part of the decision. They believe it is important to be competent in what they do and to be assessed fairly. Their decision-making approach is impersonal and impartiality is important to them: both are attributes of their sense of logic. They are usually independent and sometimes impatient with others.

Feeling →

Individuals who use **Feeling** as a Decision-Making mode pay attention to their values and to the values of others when making decisions. They also have a concern for universal values, particularly regarding what is important for human welfare or other living things. These individuals are empathetic and their sense of fairness includes compassion. They view competence and assessment in terms of what is important to the development and welfare of individuals. In addition, they value human interaction, seek harmony in interpersonal relationships, and enjoy working with others.

Significance of Contrasts → We expect to see contrasting learning activities between these preferences:

- One student prefers logic-based discussions that use objective information; another prefers discussions that involve values and human outcomes.
- One student has an interest in fairness by rule; another has an interest in fairness by empathy.
- One student prefers independent work and individual competence assessment; another prefers cooperative work with other individuals and group competence assessment.

← **Adaptation**

Jung recognized that Judgment and Perception processes play many roles in our lives. One important role is to help us adapt to the external world by conditioning how we organize and perform daily activities. Jung further recognized that the preferences within these processes, while differing in many aspects, do have certain common qualities. For example, the Judgment preferences of Thinking and Feeling both help us to structure, organize, and plan our activities and to achieve closure. Likewise, the Perception preferences of Sensation and Intuition both function to maintain spontaneity, flexibility, and openness.

← **Judgment**

Given these common qualities, Judgment and Perception processes also act as contrasting preferences that help us adapt to our daily lives. For example, Thinking and Feeling Judgment are processes that focus a variety of considerations in a decision. Therefore, they give structure to thought and action, although in very different ways. Individuals who approach their activities through Thinking or Feeling tend to work in organized ways; they prefer to develop and follow a schedule. They like to work in settings where the necessary materials are at hand. These individuals prefer to know in advance what is expected of them and how they are to meet these expectations.

← **Perception**

Individuals who approach their activities using a **Perception** process prefer and enjoy flexibility in their work. Often they are concerned that they lack sufficient information to act. As they search for additional information, they may proceed in unplanned, uncertain ways. They are less concerned with clearly defined expectations at the beginning of an assignment or with an evaluation at the completion.

← **Significance of Contrasts**

These differences can be projected into contrasting learning processes:

- One student needs structure; another needs flexibility.
- One student needs initial criteria; another needs to "discover as you go."
- One student feels uneasy without clearly defined expectations; another feels uneasy with very exact expectations.
- One student finishes assignments on time, early, or even prematurely; another tends to finish assignments late.

Teacher Notes

APPENDIX D

Learning Preference Combinations

When fully conceptualized the eight learning preferences result in sixteen combinations. Each combination contains one preference from each of the four processes: **Orientation** - Extraversion/Introversion; **Perception** - Sensation/Intuition; **Decision Making** - Thinking/Feeling; and **Adaptation** - Judgment/Perception (combinations are represented on pages 68-69). These combinations are useful in discussions with students for illustrating the diversity of the various preference combinations. The text accompanying each figure defines the qualities relating to each Learning Preference combination.

← **Diversity of Learning Preferences Combinations**

The combinations presented on the following pages clearly illustrate those preference characteristics most visible to teachers. Extraversion/Introversion and Judgment/Perception greatly affect student work, study habits, and classroom behavior. For example, they can influence whether a student is active and conversant in class, or quiet. They can also determine whether a student completes work on time or does not meet deadlines. These are some of the preference characteristics most obvious to teachers.

← **Emphasizes Learning Preference Characteristics Most Visible to Teachers**

Extraversion/Introversion and Judgment/**Perception** preferences are the primary organizers of Appendix D. The major graph divisions are Extraversion and Introversion. They begin at the left side of each page. The top row on both pages represents combinations with Extraversion, as indicated by the orange wedge at the upper left of each page. The bottom row on both pages represents combinations with Introversion, as indicated by the aqua wedge at the lower left of each page.

← **Study Habits and Classroom Behaviors**

Judgment and Perception represent the difference between the first and second pages. That is, the first page contains combinations with Judgment, as indicated by the chartreuse wedges on the right side of the page. The second page contains combinations with Perception, as indicated by the **purple** wedges on the right side of the page.

Sensation/Intuition and **Thinking**/**Feeling** have a major influence on students' cognitive processes. Combinations with Sensation and Intuition are clustered by columns, as indicated by the **green** and yellow wedges at the top of each page. Combinations with Thinking and Feeling are clustered within the columns, as indicated by the **blue** and **red** wedges at the bottom of each page.

← **Cognitive Processes**

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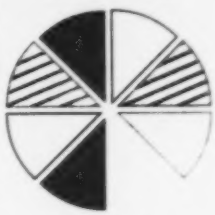
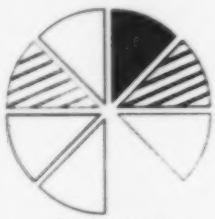
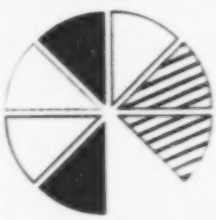
APPENDIX D – **Learning Preference Combinations**

	EXTRAVERSION SENSATION **THINKING JUDGMENT** Action, Sociability Breadth, Enthusiasm **Reality, Sequence Application, Caution** **Logic, Independence Analysis, Objectivity** **Organization, System Decisiveness, Closure**	**EXTRAVERSION SENSATION**  **FEELING JUDGMENT** Action, Sociability Breadth, Enthusiasm **Reality, Sequence Application, Caution** **Value, Relationship Empathy, Conviction** **Organization, System Decisiveness, Closure**	**EXTRAVERSION INTUITION** **FEELING JUDGMENT** Action, Sociability Breadth, Enthusiasm Imagination, Pattern Possibility, Insight **Value, Relationship Empathy, Conviction** **Organization, System Decisiveness, Closure**	**EXTRAVERSION INTUITION**  **THINKING JUDGMENT** Action, Sociability Breadth, Enthusiasm Imagination, Pattern Possibility, Insight **Logic, Independence Analysis, Objectivity** **Organization, System Decisiveness, Closure**	
	INTROVERSION SENSATION **THINKING JUDGMENT** **Reflection, Depth** Privacy, Reserve **Reality, Sequence Application, Caution** **Logic, Independence Analysis, Objectivity** **Organization, System** Decisiveness, Closure	**INTROVERSION SENSATION**  **FEELING JUDGMENT** **Reflection, Depth** Privacy, Reserve **Reality, Sequence Application, Caution** **Value, Relationship Empathy, Conviction** **Organization, System** Decisiveness, Closure	**INTROVERSION INTUITION** **FEELING JUDGMENT** **Reflection, Depth** Privacy, Reserve Imagination, Pattern Possibility, Insight **Value, Relationship Empathy, Conviction** **Organization, System** Decisiveness, Closure	**INTROVERSION INTUITION** **THINKING JUDGMENT** **Reflection, Depth** Privacy, Reserve Imagination, Pattern Possibility, Insight **Logic, Independence Analysis, Objectivity** **Organization, System** Decisiveness, Closure	

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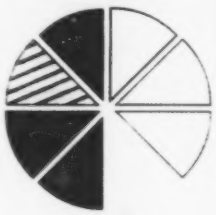
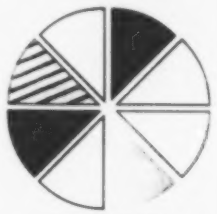
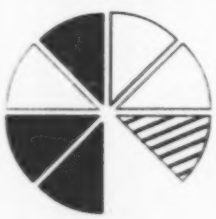
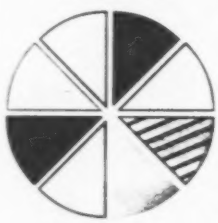
APPENDIX D – Learning Preference Combinations *(continued)*

	EXTRAVERSION SENSATION **THINKING PERCEPTION** Action, Sociability Breadth, Enthusiasm **Reality, Sequence** **Application, Caution** **Logic, Independence** **Analysis, Objectivity** **Curiosity, Novelty** **Flexibility, Play**	**EXTRAVERSION SENSATION**  **FEELING PERCEPTION** Action, Sociability Breadth, Enthusiasm **Reality, Sequence** **Application, Caution** **Value, Relationship** **Empathy, Conviction** **Curiosity, Novelty** **Flexibility, Play**	**EXTRAVERSION INTUITION** **FEELING PERCEPTION** Action, Sociability Breadth, Enthusiasm **Imagination, Pattern** **Possibility, Insight** **Value, Relationship** **Empathy, Conviction** **Curiosity, Novelty** **Flexibility, Play**	**EXTRAVERSION INTUITION**  **THINKING PERCEPTION** Action, Sociability Breadth, Enthusiasm **Imagination, Pattern** **Possibility, Insight** **Logic, Independence** **Analysis, Objectivity** **Curiosity, Novelty** **Flexibility, Play**	
	INTROVERSION SENSATION **THINKING PERCEPTION** Reflection, Depth Privacy, Reserve **Reality, Sequence** **Application, Caution** **Logic, Independence** **Analysis, Objectivity** **Curiosity, Novelty** **Flexibility, Play**	**INTROVERSION SENSATION**  **FEELING PERCEPTION** Reflection, Depth Privacy, Reserve **Reality, Sequence** **Application, Caution** **Value, Relationship** **Empathy, Conviction** **Curiosity, Novelty** **Flexibility, Play**	**INTROVERSION INTUITION** **FEELING PERCEPTION** Reflection, Depth Privacy, Reserve Imagination, Pattern Possibility, Insight **Value, Relationship** **Empathy, Conviction** **Curiosity, Novelty** **Flexibility, Play**	**INTROVERSION INTUITION**  **THINKING PERCEPTION** Reflection, Depth Privacy, Reserve Imagination, Pattern Possibility, Insight **Logic, Independence** **Analysis, Objectivity** **Curiosity, Novelty** **Flexibility, Play**	

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Teacher Notes

APPENDIX E

Readings on Psychological Type and Learning Preferences

Listed below are important readings for those interested in further information on the concepts of psychological type and learning preferences presented in this handbook. The origins of the concepts of psychological type are found in Jung's own writings. Chapter 10, "A General Theory of Types" from *Psychological Types*, contains the original descriptions of type concepts. Other helpful readings based on Jung's work include, "The Inferior Function" from *Jung's Typology*, by Maria Louise Von Franz, and Chapter 7, "Psychological Types" from *The Inner World of Childhood* by Frances Wickes.

← Jung
← Von Franz
← Wickes

A considerable amount of work has been done to continue research and application on the concepts of psychological type. Several instruments to assess type characteristics have been developed. The instrument most used for psychological assessment and research is the Myers-Briggs Type Indicator (MBTI)®. The perspective on psychological type developed by the authors of the MBTI® is found in *Gifts Differing* by Isabel Myers and Peter Myers – a basic reader for anyone interested in the applications of Jung's typology. A more recent instrument, the Murphy-Meisgeier Type Indicator for Children®, has been developed for children in grades four through eight. Both instruments are published by Consulting Psychologists Press, Palo Alto, California.

← MBTI®
← Myers and Myers
← Murphy-Meisgeier

Important references on applications of the typology to elementary education include *People Types and Tiger Stripes* by Gordon Lawrence and *The Developing Child* by Elizabeth Murphy.

← Lawrence
← Murphy

In *Understanding the Gifted Adolescent*, chapter 13, Marlene Bireley and Judy Genshaft write of the significance of understanding typology in "Learning Styles: One Way to Help Gifted Adolescents Understand and Choose Lifestyles."

← Bireley and Genshaft

Harvey Silver and Robert Hanson have developed The TLC Learning Preference Inventory® and a *Users Manual* which has been used with elementary, secondary, college, and adult learners.

← Silver and Hanson

Important references on applications of the typology to higher education include *Applications of the Myers-Briggs Type Indicator in Higher Education* by Judith Provost and Scott Anchors, and *A Casebook; Applications of the Myers-Briggs Type Indicator in Counseling* by Judith Provost.

← Provost and Anchors
← Provost

Journal of Psychological Type → *The Journal of Psychological Type* – published by the Association for Psychological Type – is a primary source for current research on the many applications of Jung's typology. The Center for the Applications of Psychological Type in Gainesville, Florida, maintains an extensive bibliography of publications on psychological type (available on computer disk).

CAPT →

READING LIST

Bireley, M., and J. Genshaft. *Understanding the Gifted Adolescent*. New York, NY: Teachers College Press, 1991.

Jung, Carl. *Psychological Types*. Princeton, NJ: Princeton/Bolligen, 1971.

Lawrence, Gordon. *People Types and Tiger Stripes*. Palo Alto, CA: Consulting Psychologists Press, 1993.

Myers, I.B., and P. Myers. *Gifts Differing*. Palo Alto, CA: Consulting Psychologists Press, 1980.

Murphy, Elizabeth. *The Developing Child*. Palo Alto, CA: Consulting Psychologists Press, 1992.

Provost, Judith. *A Casebook: Applications of the Myers-Briggs Type Indicator in Counseling*. Gainesville, FL: Center for the Application of Psychological Type, 1993.

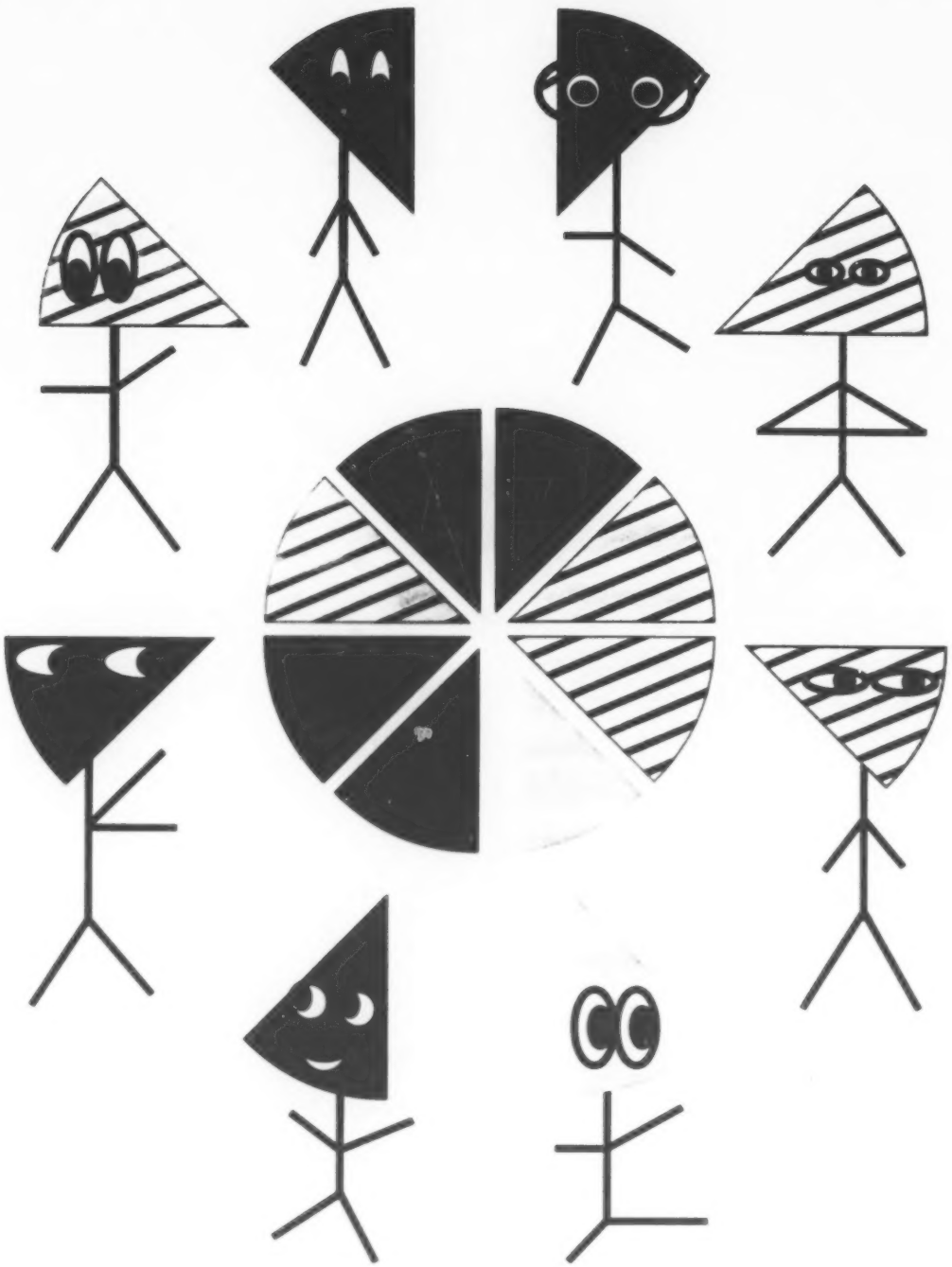
Provost, J., and S. Anchors. *Applications of the Myers-Briggs Type Indicator in Higher Education*. Palo Alto, CA: Consulting Psychologists Press, 1987.

Silver, H., and R. Hanson. *Users Manual*. Moorestown, NJ: Hanson Silver & Associates, Inc., 1980.

Von Franz, M.L., and J. Hillman. *Jung's Typology*. Irving, TX: Spring Publications, 1979.

Wickes, Frances. *The Inner World of Childhood*. Englewood, NJ: Prentice Hall, 1966.

The Preference Crew



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